631899

REPORT NUMBER: 208-CAL-95-8
212-CAL-95-8
301-CAL-95-8

VEHICLE SAFETY COMPLIANCE TESTING FOR OCCUPANT CRASH PROTECTION WINDSHIELD MOUNTING, WINDSHIELD ZONE INTRUSION (PARTIAL) AND FUEL SYSTEM INTEGRITY

HONDA MOTOR COMPANY, LTD., JAPAN
1995 Honda Odyssey EX
5-door Mini Van

NHTSA NUMBER: CS5306

CALSPAN TEST NUMBER: 8221-12

February 15, 1995

CALSPAN CORPORATION
ADVANCED TECHNOLOGY CENTER
P.O. BOX 400
BUFFALO, NEW YORK 14225

FINAL REPORT

PREPARED FOR:

U. S. Department of Transportation
National Highway Traffic Safety Administration
ENFORCEMENT
Office of Vehicle Safety Compliance
400 Seventh Street, S. W.
Room No. 6115 (NEF-30)
Washington, DC 20590

This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared By: _____
Reginald E. Evans, Project Engineer

Approved By: _____
David J. Travale, Program Manager
Transportation Sciences Center

Approval Date: June 14, 1995

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: _____

Acceptance Date: 4/8/96

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
208-CAL-95-8 212-CAL-95-8 301-CAL-95-8		

4. Title and Subtitle	5. Report Date
Final Report of FMVSS 208, 212, 219 (Partial), and 301 Compliance Testing of a 1995 Honda Odyssey EX 5-door Mini Van NHTSA No. CS5306	February 15, 1995
	6. Performing Organization Code CAL

7. Author(s)	8. Performing Organization Report No.
Reginald E. Evans, Project Engineer David J. Travale, Program Manager	8221-12

9. Performing Organization Name and Address	10. Work Unit No.
Calspan Advanced Technology Center P.O. Box 400 Buffalo, New York 14225	11. Contract or Grant No. DTNH22-93-D-11089

12. Sponsoring Agency Name and Address	13. Type of Report and Period Covered
U.S. Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance (NEF-30) 400 Seventh St , S.W., Rm. 6115, Washington, D.C. 20590	Final - February, 1995
	14. Sponsoring Agency Code NEF-30

15. Supplementary Notes

16. Abstract

A 30 mph vehicle safety compliance test was conducted on a 1995 Honda Odyssey EX 5-door Mini Van.

This test was performed at the Calspan Advanced Technology Center in Buffalo, New York on February 15, 1995. The purpose of this test was to determine compliance with the performance requirements of the following Federal Motor Vehicle Safety Standards:

1. FMVSS No. 208, "Occupant Crash Protection"
2. FMVSS No. 212, "Windshield Mounting"
3. FMVSS No. 219 (partial), "Windshield Zone Intrusion"
4. FMVSS No. 301, "Fuel System Integrity"

The test mode was perpendicular (0°) and the impact velocity was 28.9 mph. The ambient temperature at the impact face was 70 °F.

The subject test vehicle appears to comply with the requirements of FMVSS Nos. 208, 212, 219 (partial) and 301.

Type of Restraint System: The test vehicle was equipped with a driver air bag and a passenger air bag restraint system. The manual seat belts were not used for this test.

17. Key Words	18. Distribution Statement
Compliance Testing Safety Engineering FMVSS 208	Copies of this report are available from: NHTSA Technical Reference Division ; Mail Code: NAD-52 400 Seventh , S.W., Room 5108, Washington, D.C. 20590 Telephone No. (202) 366-4946 Attn: Robert Hornickle

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
UNCLASSIFIED	UNCLASSIFIED	130	

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

Section 1

PURPOSE AND TEST PROCEDURE

This 30 mph frontal barrier impact test is part of the Federal Motor Vehicle Safety Standard (FMVSS) 208, 212, 219 (partial) and 301 compliance test program conducted for the National Highway Traffic Safety Administration (NHTSA) by Calspan Advanced Technology Center under Contract No. DTNH22-93-D-11089. The purpose of this test was to determine if the subject vehicle, a 1995 Honda Odyssey EX 5-door Mini Van, meets the performance requirements of FMVSS 208, "Occupant Crash Protection"; FMVSS No. 212, "Windshield Mounting"; FMVSS No. 219 (partial), "Windshield Zone Intrusion"; and FMVSS No. 301, "Fuel System Integrity". This compliance test was conducted using the requirements found in the OVSC Laboratory Test Procedure No. TP-208-09, dated March 15, 1993.

Section 2

SUMMARY OF TEST NUMBER CS5306

A frontal barrier was impacted by a 1995 Honda Odyssey EX 5-door Mini Van at a velocity of 28.9 mph. The test was performed at the Calspan Corporation Advanced Technology Center on February 15, 1995. Pre- and Post-test photographs of the vehicle and dummies can be found in Appendix A.

The frontal barrier impact event was documented by one real-time camera and 14 high-speed cameras. Camera locations and other pertinent camera information can be found in this report.

Two Part 572E, 50th percentile male anthropomorphic test devices (ATDs), were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the OVSC Laboratory Test Procedure.

Both ATDs were fully instrumented with head and chest three axis (x, y, and z) accelerometers, chest displacement potentiometers and left/right femur load cells. These ATDs had been certified prior to the test.

The 26 channels of data were recorded on a P.C. based data acquisition system. Appendix B contains the vehicle and dummy response data traces.

The driver's HIC was 158.56. The maximum chest deceleration over 3 milliseconds was 55.382 g's with -2.2 inches of deflection. The maximum force on the driver's left femur was -1213.4 pounds and -1612.6 pounds on the right femur.

The right front passenger's HIC was 307.17. The maximum chest deceleration over 3 milliseconds was 43.087 g's with -0.7 inches of deflection. Loads of -1592.9 and -1797.0 pounds were recorded on the left and right femurs respectively.

Section 2

SUMMARY OF TEST NUMBER CS5306

A frontal barrier was impacted by a 1995 Honda Odyssey EX 5-door Mini Van at a velocity of 28.9 mph. The test was performed at the Calspan Corporation Advanced Technology Center on February 15, 1995. Pre- and Post-test photographs of the vehicle and dummies can be found in Appendix A.

The frontal barrier impact event was documented by one real-time camera and 14 high-speed cameras. Camera locations and other pertinent camera information can be found in this report.

Two Part 572E, 50th percentile male anthropomorphic test devices (ATDs), were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the OVSC Laboratory Test Procedure.

Both ATDs were fully instrumented with head and chest three axis (x, y, and z) accelerometers, chest displacement potentiometers and left/right femur load cells. These ATDs had been certified prior to the test.

The 26 channels of data were recorded on a P.C. based data acquisition system. Appendix B contains the vehicle and dummy response data traces.

The driver's HIC was 158.56. The maximum chest deceleration over 3 milliseconds was 55.382 g's with -2.2 inches of deflection. The maximum force on the driver's left femur was -1213.4 pounds and -1612.6 pounds on the right femur.

The right front passenger's HIC was 307.17. The maximum chest deceleration over 3 milliseconds was 43.087 g's with -0.7 inches of deflection. Loads of -1592.9 and -1797.0 pounds were recorded on the left and right femurs respectively.

Table 2

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION :

Year/Make/Model/Body Style : 1995 Honda Odyssey EX 5-door Mini Van

NHTSA No. : CS5306 ; VIN: JHMRA1872SC000867 ; Color : Grey

Engine Data: 4 cylinders; 132 CID; 2.2 Liters; - cc

Placement : - Longitudinal or In-Line; √ Transverse of Lateral

Transmission Data : 4 speeds; - Manual; √ Automatic; √ Overdrive

Final Drive : - Rear Wheel Drive; √ Front Wheel Drive; - Four Wheel Drive

Major Options : √ A/C; √ Pwr.Strg.; √ Pwr. Brakes

√ Pwr. Windows; √ Pwr. Door Locks; √ Tilt Wheel

Date Received : 1-23-95 ; Odometer Reading 11.2 miles

Selling Dealer : RALPH PONTIAC, INC.

& Address: 3939 West Ridge Road, Rochester, N.Y. 14626

DATA FROM TIRE VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by : HONDA MOTOR COMPANY, LTD., JAPAN

Date of Manufacture 11/94

GVWR : 4740 lbs.; GAWR: 2360 lbs. FRONT; 2470 lbs. REAR

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load : 44 psi FRONT

44 psi REAR

Recommended Tire Size : P205/65 R 15

* Recommended Cold Tire Pressure : 32 psi FRONT; 32 psi REAR

Size of Tires on Test Vehicle: P205/65 R 15 ; Manufacturer: Good Year

Vehicle Capacity Data :

Type of Front Seats: - Bench; √ Bucket; - Split Bench

Number of Occupants: 2 Front; 5 Rear; 7 Total

Vehicle Capacity Weight (VCW) = 1150 lbs.

No. of Occupants x 150 lbs. = 1,050 lbs.

Rated Cargo/Luggage Weight (RCLW) = 100 lbs.

*Tire pressure used for test

Table 2

GENERAL TEST AND VEHICLE PARAMETER DATA (cont.)

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (with maximum fluids)= UDW:

Right Front =	1013	lbs.	Right Rear =	735	lbs.
Left Front =	1026	lbs.	Left Rear =	715	lbs.
TOTAL FRONT =	2,039	lbs.	TOTAL REAR =	1,450	lbs.

TOTAL DELIVERED WEIGHT = 3,489.0 lbs.

% of Total Front of Vehicle Weight = 58.4 % of Total Rear Weight = 41.6 %

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT :

Total Delivered Weight =	3,489	lbs.
Rated Cargo/Luggage Weight (RCLW) =	100	lbs.
Weight of 2 p.572 Dummies @ 167 each =	334	lbs.
TARGET TEST WEIGHT =	3,923	lbs.

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 92 POUNDS OF CARGO WEIGHT:

Right Front =	1102	lbs.	Right Rear =	861	lbs.
Left Front =	1088	lbs.	Left Rear =	864	lbs.
TOTAL FRONT =	2,190	lbs.	TOTAL REAR =	1,725	lbs.

TOTAL TEST WEIGHT = 3,915.0 lbs.

% of Total Front Weight = 55.9 % % of Total Rear Weight = 44.1 %

Weight of Ballast Secured in Vehicle Trunk Area = 70.0 lbs.

Vehicle Components Removed for Weight Reduction: None

VEHICLE ATTITUDE (all dimension in inches) :

AS DELIVERED :	RF	28.2	LF	27.9	RR	28.2	LR	28.2
FULLY LOADED :	RF	27.7	LF	27.5	RR	27.1	LR	27.1
AS TESTED :	RF	27.8	LF	27.6	RR	27.8	LR	27.7

Vehicle's Wheel Base : 111.4 in.

Location of Vehicle's C.G. : 49.1 inches rearward of front wheel center.

FUEL SYSTEM DATA :

Fuel System Capacity From Owner's Manual = 17.2 gallons

Usable Capacity Figure Furnished by COTR = 17.2 gallons

Test Volume Range (92 to 94% of Usable Capacity) = 15.8 to 16.2 gallons

ACTUAL TEST VOLUME= 16.0 gallons (with entire fuel system filled)

Table 3

POST IMPACT DATA

TYPE OF TEST:

Type of Test : Frontal Barrier Impact Angle : 0°

Test Date : February 15, 1995 Time: 11:30 Temperature: 70 °F

Vehicle NHTSA No. : CS5306

Required Impact Velocity Range : 28.9 to 29.9 mph

BARRIER IMPACT VELOCITY : (Speed traps within 5 feet of impact plane.)

Trap No. 1 = 28.9 mph; Trap No. 2 = 28.9 mph

Distance from vehicle to barrier :(1) entering trap = 52 inches

(2) exiting trap = 12 inches

VEHICLE STATIC CRUSH: (For frontal and rear impacts only.)

Vehicle Length:

Pre-Test	Right =	181.5	; C/L =	187.4	; Left =	181.2
Post-Test	Right =	167.8	; C/L =	167.7	; Left =	167.7
Crush	Right =	13.7	; C/L =	19.7	; Left =	13.5

AVERAGE = 15.6 inches

VEHICLE REBOUND: (From rigid barrier only.)

Distance from front of test vehicle to impact point :

Right = 12.1 ; C/L = 9.5 ; Left = 12.0

AVERAGE = 11.2 inches

DOOR OPENING :	Left	Right
Front	Closed/Operable	Closed/Operable
Rear	N/A	Closed/Operable
SEAT MOVEMENT :	**Seat Back Failure**	**Seat Shift**
Front	None	0.0
Rear	N/A	N/A

Table 3

POST IMPACT (cont.)

GLAZING DAMAGE :

None

OTHER NOTABLE IMPACT FEATURES :

Steering column stroked upward.

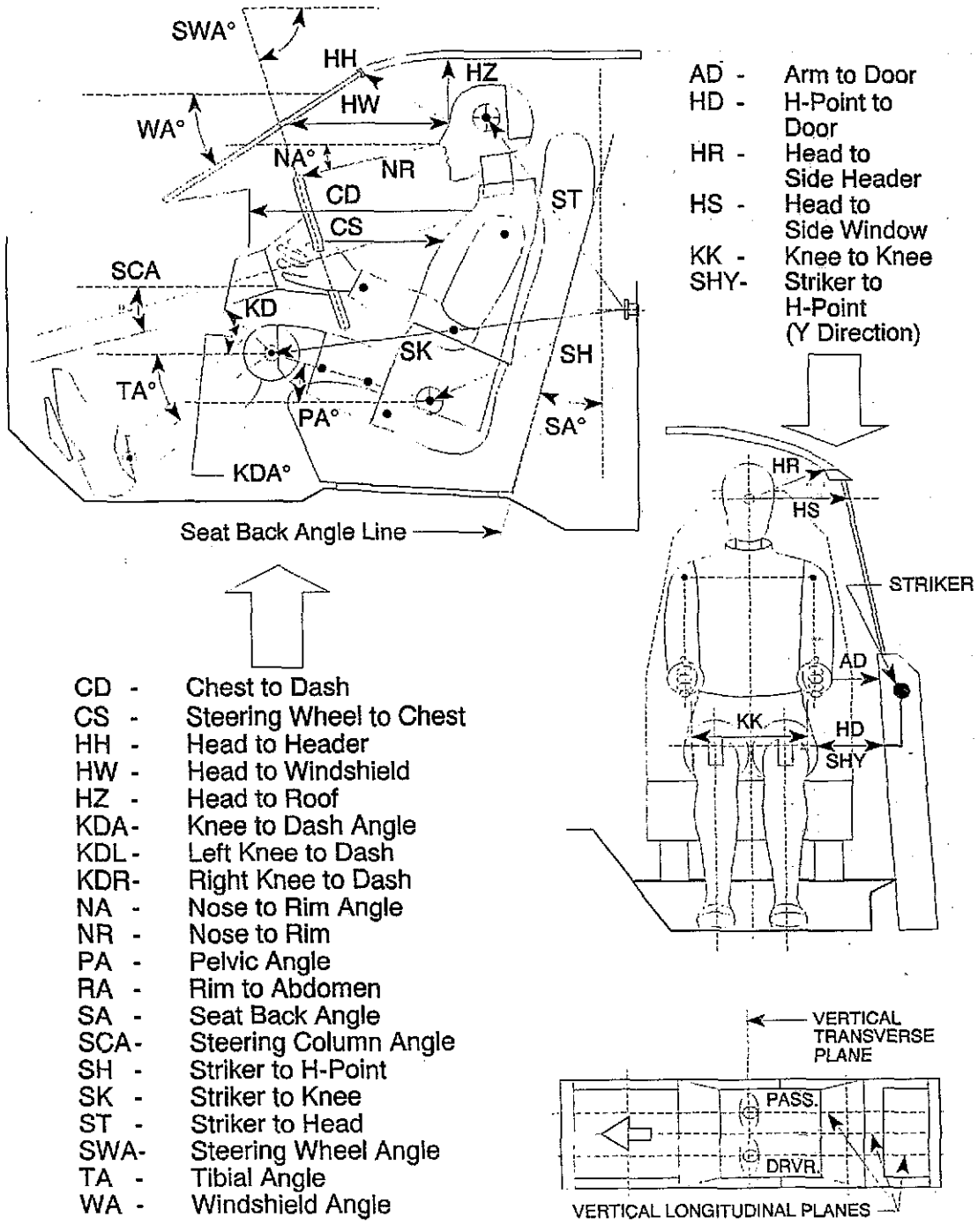
Section 3

OCCUPANT AND VEHICLE DATA

Figure 2

PART 572 DUMMY IN-VEHICLE POSITION

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



CD - Chest to Dash
CS - Steering Wheel to Chest
HH - Head to Header
HW - Head to Windshield
HZ - Head to Roof
KDA- Knee to Dash Angle
KDL- Left Knee to Dash
KDR- Right Knee to Dash
NA - Nose to Rim Angle
NR - Nose to Rim
PA - Pelvic Angle
RA - Rim to Abdomen
SA - Seat Back Angle
SCA- Steering Column Angle
SH - Striker to H-Point
SK - Striker to Knee
ST - Striker to Head
SWA- Steering Wheel Angle
TA - Tibial Angle
WA - Windshield Angle

Table 4

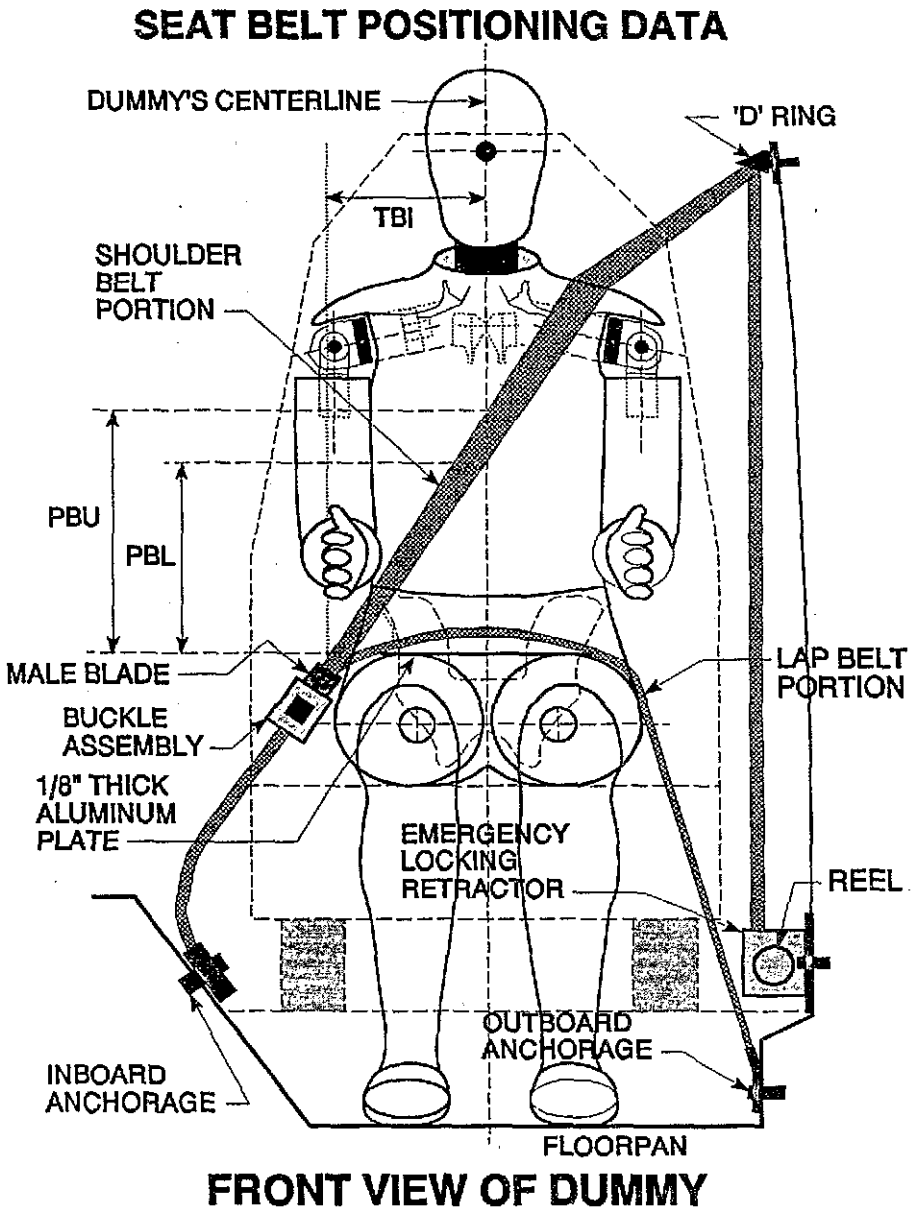
FRONT SEAT OCCUPANT MEASUREMENTS

(All dimensions excluding angles are in inches).

	DRIVER (Serial #341)			PASSENGER (Serial #342)		
WA°	29.5 deg.			-		
SWA°	56.5 deg.			-		
SCA°	33.5 deg.			-		
SA°	*			*		
HZ	7.2			7.0		
HH	17.0			17.2		
HW	26.3			26.3		
HR	9.0			8.7		
NR	18.2	Angle	16 deg.	-		
CD	27.1			22.3		
CS	13.1			-		
RA	8.3			-		
KDL/KDA	6.3	Angle	21 deg.	5.6		
KDR/KDA	6.3			5.5	Angle	30 deg.
PA°	22 deg.			23 deg.		
TA°	45 deg.			51 deg.		
KK	11.4			10.5		
ST	24.0	Angle	5 deg.	24.4	Angle	5 deg.
SK	22.2	Angle	91 deg.	22.7	Angle	85 deg.
SH	7.0	Angle	117 deg.	8.1	Angle	105 deg.
SHY	8.5			9.0		
HS	13.1			13.0		
HD	5.1			5.3		
AD	4.0			3.2		

* Seat back set at fifth locking position from foremost.

Figure 3

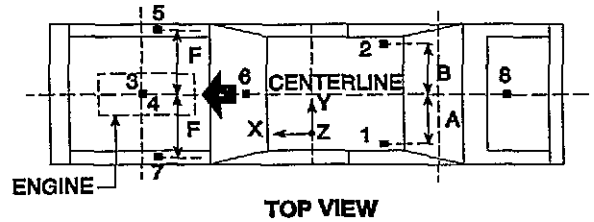


	DRIVER DUMMY (inches)	PASSENGER DUMMY (inches)
PBU -- Top surface of alum. plate to upper edge	*	*
PBL -- Top surface of alum. plate to belt lower edge	*	*
TBI -- Distance from torso centerline to buckle	*	*

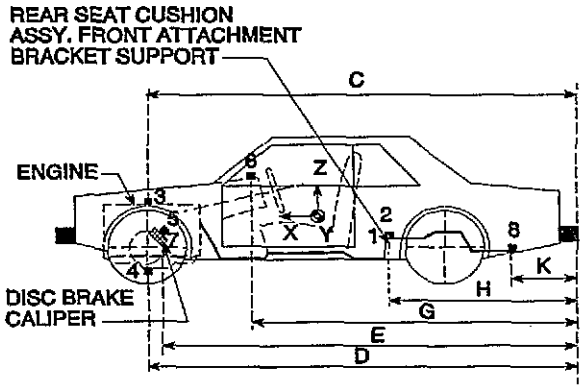
* Vehicle equipped with air bag, manual seat belt not used for this position.

Figure 4

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



TOP VIEW



LEFT SIDE VIEW

ACCELEROMETER NUMBER*	ACCELEROMETER LOCATION	DIRECTION		
		X	Y	Z
1	Left Rear Seat Crossmember	X		
2	Right Rear Seat Crossmember	X		
3	Top of Engine	X		
4	Bottom of Engine	X		
5	Right Disc Brake Caliper	X		
6	Instrument Panel	X		
7	Left Disc Brake Caliper	X		
8	Trunk Z			X

*The accelerometer pack number can be correlated with the vehicle response data traces found in Appendix B.

Table 5

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

DIMENSION	LENGTH (Inches)	
	PRE-TEST VALUES	POST-TEST VALUES
A Left Rear Seat Crossmember Y	22.0	22.0
B Right Rear Seat Crossmember Y	22.0	22.0
C Top of Engine X	161.0	145.9
D Bottom of Engine X	157.6	142.2
E Disc Brake Calipers X	151.1	Right = 147.0 Left = 147.3
F Disc Brake Calipers Y	22.5	23.2
G Instrument Panel X	117.9	118.5
H Rear Seat Crossmembers X	80.5	80.5
K Trunk X	16.2	16.2

LOCATION NUMBER	DESCRIPTION	MAXIMUM VALUE			
		Pos.	msec.	Neg.	msec.
1	Rear Seat X-Member @ Left Side	3.1	18.4	-34.5	49.0
2	Rear Seat X-Member @ Right Side	1.7	133.8	-28.5	43.6
3	Top of Engine Block	53.3	42.6	-120.3	31.7
4	Bottom of Engine	23.4	47.8	-148.4	28.0
5	Disc Brake Caliper @ Right Side	19.0	47.8	-89.9	29.5
6	Instrument Panel	4.7	98.8	-43.0	50.3
7	Disc Brake Caliper @ Left Side	23.6	49.3	-76.6	42.5
8	Trunk	20.8	27.6	-13.4	22.8

Figure 5

CAMERA POSITIONS FOR FRONTAL IMPACTS

NOTE: Camera Information shown on Table 5.

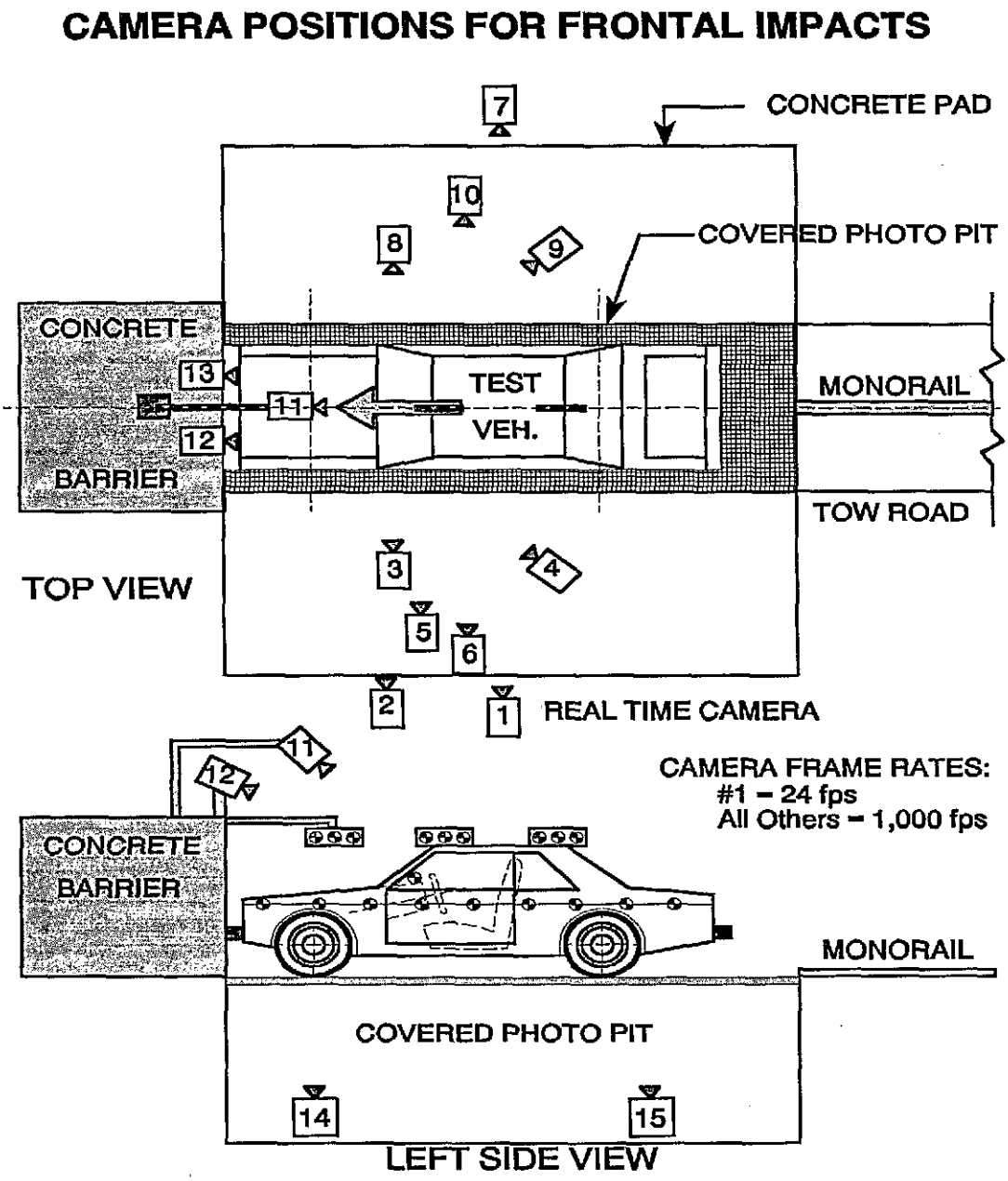


Table 6

HIGH-SPEED CAMERA LOCATIONS

Test No. CS5306 Vehicle: 1995 Honda Odyssey EX 5-door Mini Van

Camera No.	VIEW	CAMERA POSITIONS (In.)* X	Y	Z	ANGLE** (deg)	FILM PLANE TO HEAD TARGET (In.)	LENS (mm)	SPEED (fps)
1	Real-Time Camera	-	-	-	-	-	-	24
2	Overall Left Side	250	72	41	-2	232.5	13	1000
3	Left Side View	320	49	41	-1	302.5	25	1000
4	Driver and Interior View	101	119	70	-17	-	13	1040
5	Steering Column (Bottom)	299	90	46	-2	281.5	25	1200
6	Steering Column (Top)	299	90	70	-8	281.5	25	1120
7	Overall Right Side	252	86	43	-2	234.5	13	1050
8	Right Side View	309	66	56	-2	291.5	25	1100
9	Passenger and Interior View	314	80	41	-2	-	35	1170
10	Right Passenger View	99	118	71	-17	-	13	1100
11	Windshield View	23	21	70	-45	-	8	1050
12	Driver Front View	24	21	70	-48	-	8	1020
13	Passenger Front View	11	0	127	-55	-	13	1000
14	Pit View of Engine	115	0	-86	90	-	13	900
15	Pit View of Fuel Tank	37	0	-86	90	-	13	960

*X = film plane to monorail centerline
Y = film plane to impact location
Z = film plane to ground
** = referenced to horizontal plane

Figure 6

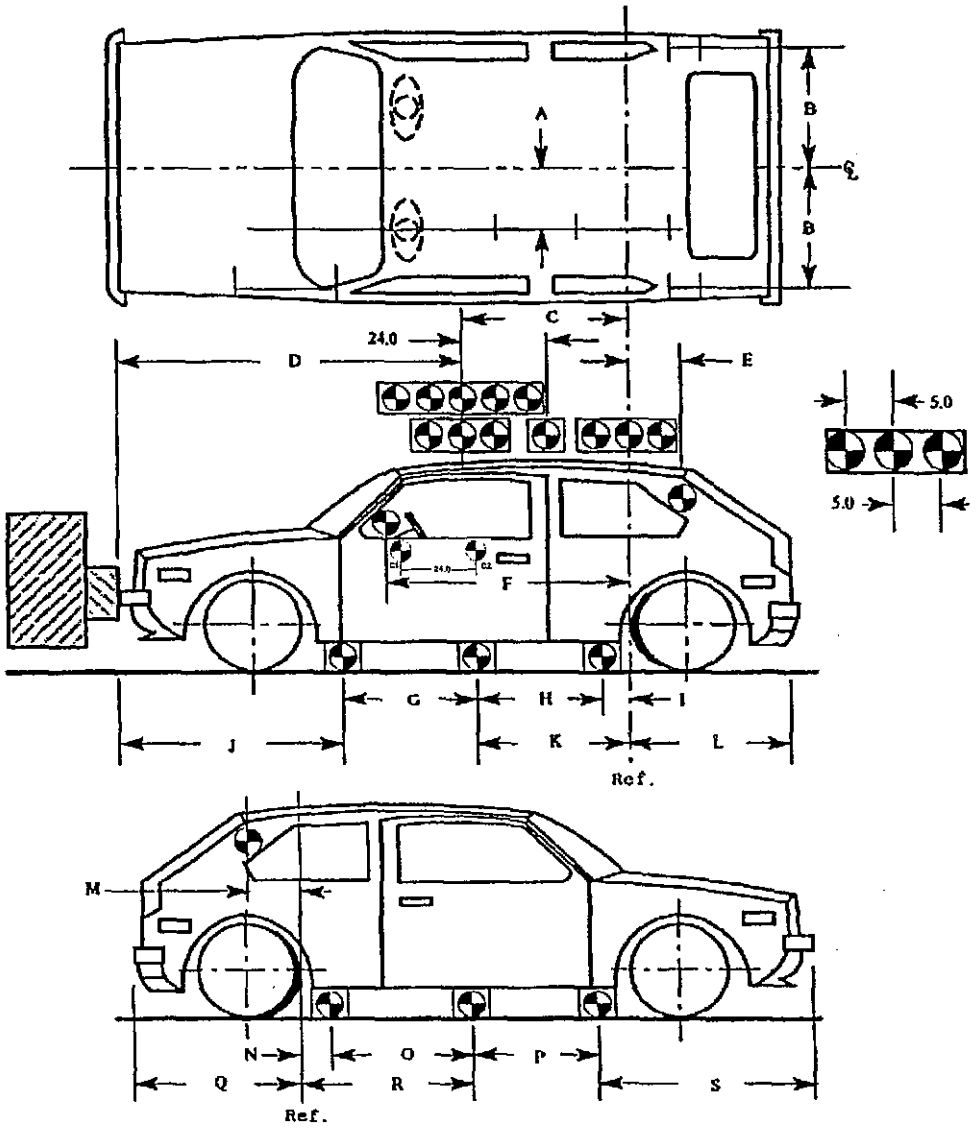
VEHICLE TARGET LOCATIONS
(All dimensions in inches)

Key (Inches)

A = 14.5
B = 20.3

C = 48.0
D = 86.8
E = 0.0
F = 67.0
G = 38.0
H = 38.0
I = 5.0
J = 53.2
K = 43.0
L = 53.2

M = 0.0
N = 5.0
O = 38.0
P = 38.0
Q = 52.8
R = 43.0
S = 53.6



Note: Targets on front fender are 12.0 inches apart.
Targets rearward of front fender are 24.0 inches apart.

Figure 7

TEST VEHICLE MEASUREMENTS

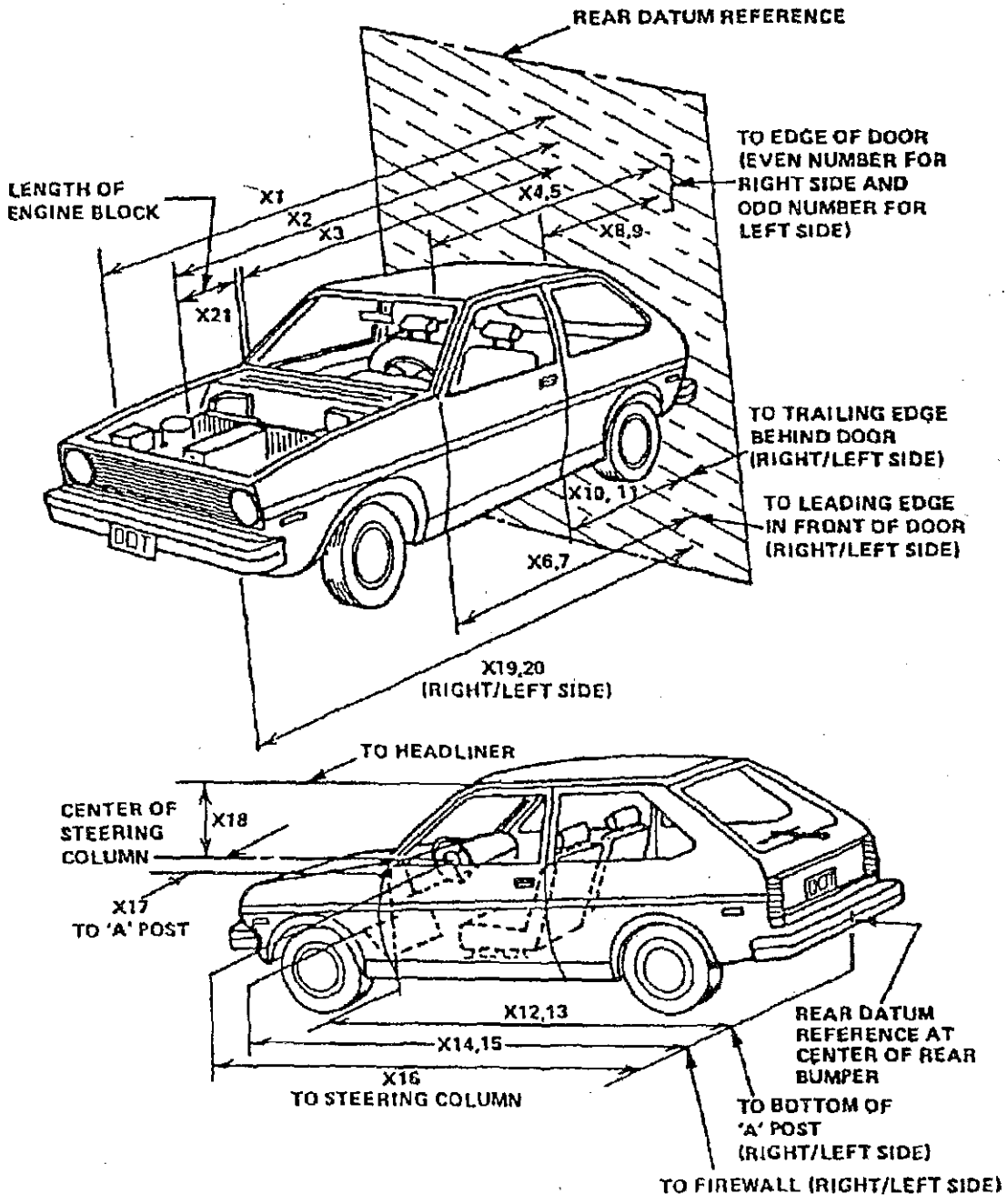


Table 7

VEHICLE MEASUREMENTS

		All Dimensions in inches		
No.		Pre-Test	Post-Test	Differences
X1	Total Length of Vehicle at Centerline	187.4	167.7	19.7
X2	Rear Surface of Vehicle to Front of Engine	162.2	155.7	6.5
X3	Rear Surface of Vehicle to Firewall	141.2	139.5	1.7
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	130.8	130.5	0.3
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	131.1	130.3	0.8
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	131.2	131.0	0.2
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	131.3	130.9	0.4
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	89.6	89.0	0.6
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	89.8	88.9	0.9
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	90.2	90.2	0.0
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	90.6	90.0	0.6
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	131.8	131.3	0.5
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	132.0	131.3	0.7
X14	Rear Surface of Vehicle to Firewall, Right Side	143.7	143.2	0.5
X15	Rear Surface of Vehicle to Firewall, Left Side	140.7	140.5	0.2
X16	Rear Surface of Vehicle to Steering Column	114.2	114.2	0.0
X17	Center of Steering Column to "A" Post	15.5	16.0	-0.5
X18	Center of Steering Column to Headliner	18.3	19.5	-1.2
X19	Rear Surface of Vehicle to Right Side of Front Bumper	181.5	167.8	13.7
X20	Rear Surface of Vehicle to Left Side of Front Bumper	181.2	167.7	13.5
X21	Length of Engine Block	20.0	20.0	0.0

Section 4

SUMMARY OF RESULTS OF FMVSS NOS. 208, 212, 219 AND 301

- "Occupant Crash Protection," FMVSS No. 208 Data
- "Windshield Mounting," FMVSS No. 212 Data
- "Windshield Zone Intrusion," FMVSS No. 219 (Partial) Data
- "Fuel System Integrity," FMVSS No. 301

Table 8

DUMMY INJURY CRITERIA VALUES

NHTSA No. : CS5306 Vehicle : 1995 Honda Odyssey EX 5-door Mini Van

	MAXIMUM ACCELERATION (g's)								
	HEAD				CHEST				
	X	Y	Z	R	X	Y	Z	R*	Displacement
Dummy (1)	-38.0	5.3	20.4	41.1	-58.8	6.8	-6.8	55.382	-2.2
Dummy (2)	54.2	-76.6	47.9	95.3	-44.0	-10.0	22.8	43.087	-0.7

	MAXIMUM FORCE - FEMUR LOAD (lbs.)	
	LEFT FEMUR	RIGHT FEMUR
Dummy (1)	-1213.4	-1612.6
Dummy (2)	-1592.9	-1797.0

	HEAD INJURY CRITERIA**			
		36 millisecond Maximum		Avg. Acc (g)
	HIC	t_1 (msec)	t_2 (msec)	t_1 TO t_2
Dummy (1)	158.56	63.480	94.800	30.32
Dummy (2)	307.17	115.920	125.280	64.04

* Defined as exceeding 0.003 sec. duration
**As defined in FMVSS No. 208

Table 9

FMVSS NO. 208 - SEAT BELT WARNING SYSTEM CHECK

With occupant in driver's position, the lap belt in stowed position, and ignition switch placed in "Start/On" position:

Log time duration of audible warning signal = 6.0 sec.

Log time duration of reminder light operation = Continuous sec.

With occupant in driver's position, lap belt in use, and the ignition switch placed in "Start/On" position :

Log time duration of audible warning signal (audible warning should not operate) = 0.0 sec.

Log time duration of reminder light operation = 0.0 sec.

Note wording of visual warning :

Fasten Seat Belt -

Fasten Belt -

Symbol 101 √

Table 10

FMVSS NO. 208 - LABELING AND DRIVER'S MANUAL INFORMATION

Locate label which describes manufacturers maintenance or replacement schedule for crash-deployed occupant protection system.

Describe location :

Label located on the inside panels of the driver and passenger sunvisors.

The label states, "The SRS must be inspected ten years after the manufacture date located on vehicle certification label."

Were appropriate instructions concerning maintenance and/or replacement of this system provided ?

YES √ NO -

Was a description of the functional operation of the system provided ?

YES √ NO -

Is there a reference to the instructions and description of the system on the label ?

YES √ NO -

Was an owner's manual provided ? YES √ NO -

Did the owner's manual contain appropriate information concerning maintenance and/or replacement and a description of the functional operation of the system ?

YES √ NO -

Table 11

FMVSS NO. 208 - READINESS INDICATOR

An occupant restraint system that deploys in the event of a crash shall have a monitoring system with a readiness indicator. A totally mechanical system is exempt from this requirement.

Is the system totally mechanical ? YES - NO √

Describe the location of the readiness indicator :

Readiness indicator located at lower left side of instrument cluster.

Is the readiness indicator clearly visible to the driver ? YES √ NO -

Is a list of the elements in the occupant restraint system, being monitored by the readiness indicator, provided ?

YES √ NO -

Table 12

FMVSS NO. 208 - COMFORT AND CONVENIENCE TEST SUMMARY

Test Vehicle NHTSA No. :	CS5306
Make/Model :	1995 Honda Odyssey EX 5-door Mini Van
Date of Comfort/Convenience Check :	2-12-95
Technician Performing Check :	R. E.
GVWR :	4740

Seat belt comfort and convenience requirements cover vehicles manufactured on or after September 1, 1986, which have a gross vehicle weight rating of 10,000 pounds or less. Exemptions to this rule are belts installed in a walk-in, van-type vehicle and manual Type 2 belt systems installed in the front outboard seating positions of passenger automobiles. On or after September 1, 1989, the exemption of the type 2 manual seat belts installed in the front outboard seating positions of passenger automobiles will change depending on the states' enactment of mandatory usage laws.

Was vehicle built after or on September 1, 1986, and is it equipped with :

1. Automatic seat belts — YES - NO √

If yes, go to requirements D1, D2, and D3

2. Manual seat belts* — YES √ NO -

a. The seat belts, other than Type 2 lap/shoulder belts, are located in the front outboard seating positions of a passenger automobile.

YES - NO √

(Go to requirements D3, D4, D5, and D6)

b. The seat belt system is Type 2 lap/shoulder belt in the front outboard seating positions or the seat belts are located in a walk-in van.

STOP

* If the seat belts are voluntarily installed by the manufacturer they do not have to comply.

Table 12 (cont.)

D1
CONVENIENCE HOOKS

A convenience hook or other device is provided to stow seat belt webbing to facilitate entering or exiting the vehicle.

YES - NO √

Check the option which applies to this test vehicle:

1. A convenience hook or other device automatically releases the webbing when the automatic belt system is operational and remains in the released mode as long as the vehicle's ignition switch is moved to the "on" or "start" position and the vehicle's drivetrain is engaged.

YES - NO √

2. A convenience hook or other device automatically releases the webbing when the automatic belt system is operational and remains in the released mode as long as the vehicle's ignition switch is moved to the "on" or "start" position and the vehicle's parking brake is in the released mode (non-engaged)

YES - NO √

D2
WEBBING TENSION - RELIEVING DEVICE

The seat belt assembly installed in the outboard designated seating position has either manual or automatic tension relieving devices permitting the introduction of slack in the webbing of the shoulder belt ("comfort clips" or "window shade" devices).

YES - NO √

Check the owner's manual and determine the maximum amount of slack recommended by the manufacturer in inches. The recommended slack is N/A inches. Introduce this slack into the shoulder belt before testing the vehicle to comply with the requirements of FMVSS 208 S5.1. A warning is included in the owner's manual that introducing slack beyond the amount specified can significantly reduce the effectiveness of the shoulder belt.

YES N/A NO N/A

(If NO, provide explanation.)

Check the option which applies to this test vehicle:

1. This vehicle is equipped with automatic seat belts and the tension relieving device is cancelled each time the adjacent door is opened.

YES N/A NO N/A

(If NO, provide explanation.)

Table 12 (cont.)

2. This vehicle is equipped with manual belts, required to meet FMVSS 208 S4.6, and the tension relieving device is cancelled each time one of the following options occurs:

a. The adjacent door is opened.	YES	N/A	NO	N/A
b. The latch plate is released from the buckle.	YES	N/A	NO	N/A

3. This is an open-body vehicle, without doors. Does the manual mean to cancel any shoulder belt slack introduced by a tension relieving device to operate properly ?

YES N/A NO N/A

(If NO, provide explanation.)

D3
BELT CONTACT FORCE

1. Do not measure the belt contact force if the manual or automatic seat belt assemblies in this vehicle incorporate a webbing tension relieving device. Does the vehicle incorporate a tension relieving device?

YES - NO √

2. Seat are adjusted according to instructions in Appendix B.

YES √ NO -

3. The test dummies are positioned according to dummy position placement instructions in Appendix B and Appendix C.

YES √ NO -

4. Close the vehicle's adjacent door, pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest, then fasten the latch. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point, pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. Measure the contact force exerted by the belt webbing on the dummy's chest. The contact force is 0.4 pounds. Contact the COTR if the contact force exceeds 0.7 pounds.

Table 12 (cont.)

D4
LATCHPLATE ACCESSIBILITY

1. Position the test dummy in the driver's seat or passenger's seat in its forward most adjustment position.

   YES √ NO -

2. Attach the inboard and outboard reach string. YES √ NO -

3. Extend each line backward and outboard to generate arcs of the reach envelope of the test dummy's arms. With the latchplate in the normal stowed position, check to assure that the latchplates are within the reach envelope.

   YES √ NO -

4. Using the clearance test block, determine if there is sufficient clearance between the vehicle seat and the side of vehicle interior to allow the test block to move unhindered to the latchplate or buckle.

   YES √ NO -

D5
RETRACTION

1. Seats and seat backs are adjusted according to instructions in Appendix B "General Test Conditions" in TP-208-09, dated March 15, 1993.

   YES √ NO -

2. Use anthropomorphic test dummies whose arms have been removed and position the dummies in the front outboard designated seating positions according to instructions in Appendix B and restrain the dummies, using the belt systems for the positions being tested.

   YES √ NO -

3. Outboard armrests which are capable of being stowed on vehicle seats shall be placed in their stowed positions.

   YES √ NO -

4. Check the option which applies to this test vehicle:

   a. The torso and lap belt webbing of the seat belt system automatically retract to a stowed position when the adjacent vehicle door is in an open position and the seat belt latch plate is released.

      YES √ NO -

Table 12 (cont.)

b. The torso and lap belt webbing of the seat belt system automatically retract when the seat belt latchplate is released.

YES √ NO -

5. With the webbing and hardware in the stowed position, close the door to assure that the webbing and hardware are prevented from being pinched.

YES √ NO -

6. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, check to assure that the belt system fully retracts when the tension-relief device is manually deactivated.

YES N/A NO N/A

D6
ACCESSIBILITY

The requirements for accessibility do not apply to:

1. Seats whose seat cushions are removable so that the seat back serves a function other than seating;
2. Seats which are removable;
3. Seats which are movable so that the space formerly occupied by the seat can be used for a secondary function.

If the seats in this vehicle are different than the criteria above, then determine if:

1. Each manual seat belt assembly whose webbing is designed to pass through the seat cushion or between the seat cushion and seat back has one of the following three parts (the seat belt latchplate, the buckle, or the seat belt webbing) on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant).

YES √ NO -

2. The remaining two seat belt parts are accessible under normal conditions.

YES √ NO -

Table 12 (cont.)

3. The buckle and latchplate pass through the guides or conduits provided and do not fall behind the seat when the following events occur in order:

   a. The belt is completely retracted or, if the belt is non-retractable, the belt is unattached.

   YES √ NO -

   b. The seat is moved to any position to which it is designed to be adjusted.

   YES √ NO -

   c. The seat back, if foldable, is folded forward as far as possible and then moved backward into positions.

   YES √ NO -

4. Is the inboard receptacle end of the seat belt assembly which is installed in the outboard designated seating position accessible with the center arm rest in any position to which it can be adjusted without moving the armrest?

   YES √ NO -

D7
LATCH MECHANISM

A seat belt assembly installed in a passenger car, except an automatic belt assembly, shall have a latch mechanism:

1. Whose components are accessible to a seated occupant in both the stowed and operational positions.

   YES √ NO -

2. That releases both the upper torso restraint and the lap belt simultaneously, if the assembly has a lap belt and an upper torso restraint that require unlatching for release of the occupant.

   YES √ NO -

3. That releases at a single point by a push button action.

   YES √ NO -

Figure 8

FMVSS NO. 212 - "WINDSHIELD MOUNTING" DATA SHEET

DETAILS OF WINDSHIELD MOUNTING SUCH AS RETENTION METHOD, TRIM TYPE, ETC. :

The windshield is bonded in place with 0.9 inch plastic/rubber molding along top and sides. Bottom of windshield is covered by a plastic shroud.

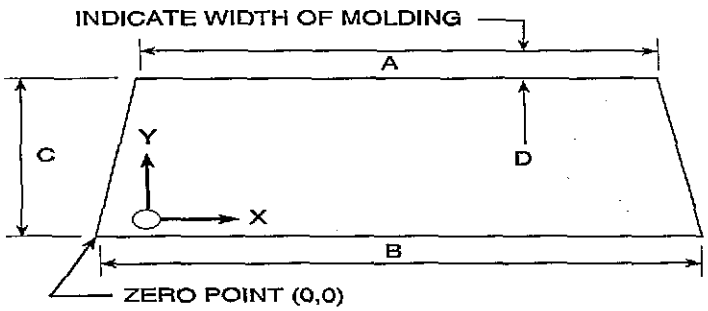
FMVSS 212 REQUIREMENTS :

The Post - Test periphery retention amount must be at least 75% of the Pre - Test periphery measurement for vehicle NOT equipped with automatic restraints, and 50% for each side of windshield for vehicles equipped with automatic restraint systems for front occupants.

FMVSS 212 TEST DATA :

	WINDSHIELD PERIPHERY		
	PRE - TEST (in.)	POST - TEST (in.)	PERCENT RETENTION
RIGHT SIDE	93.95	93.95	100.0
LEFT SIDE	93.95	93.95	100.0
TOTAL	187.9	187.9	100.0

AREA OF RETENTION FAILURE:



FRONT VIEW OF WINDSHIELD

FAILURE DETAILS : None

Figure 9

FMVSS NO. 219 (PARTIAL) - "WINDSHIELD ZONE INTRUSION" DATA SHEET

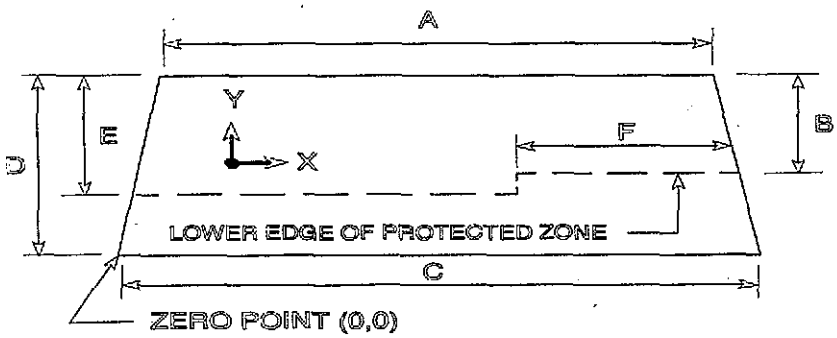
PROTECTED ZONE LOWER EDGE REQUIREMENT :

The lower edge of the protected zone is determined by placing a 6.5" dia. rigid sphere weighing 15 pounds in a position such that it simultaneously contacts the inner surface of the windshield and the top surface of the instrument panel including padding. The locus of points is drawn on the inner surface of the windshield contacted by the sphere across the width of the instrument panel. From the outermost contactable points, extend the locus line horizontally to the edges of the windshield, and then draw a line on the inner surface of the windshield below and 1/2" distant from the locus line. The LOWER EDGE OF THE PROTECTED ZONE is the longitudinal projection of this line onto the outer surface of the windshield

FMVSS 219 TEST DATA : (Dimensions in inches.)

KEY:

A= 50.3
B= 25.0
C= 62.0
D= 37.8
E= 24.8
F= 58.6



FRONT VIEW OF WINDSHIELD

DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 1/4" :

(Show location of penetration on above sketch)

	COORDINATES	
	X	Y
1		
2		
3		
4		

none

Table 13

FUEL SYSTEM INTEGRITY POST IMPACT TEST DATA

FMVSS NO. 301

TEST VEHICLE NHTSA NO. : CS5306 TEST DATE : February 15, 1995

Vehicle Mfgr./Make/Model : 1995 Honda Odyssey EX 5-door Mini Van

Test vehicle fuel tank filled to 92% to 94% of manufacturer's "usable" capacity and with electric fuel pump operating (if it will operate without engine operation). Part 572 test dummies located at each front designated seating position.

****

TEST VEHICLE IMPACT TYPE :

X Frontal (30 mph)

\- Oblique (30 mph) with - °barrier face first contacting - (driver/passenger) side

\- Rear Moving Barrier (30 mph)

\- Lateral Moving Barrier (20 mph)

FUEL SPILLAGE MEASUREMENT:

	ACTUAL	MAX ALLOWED
1. From impact until vehicle motion ceases	0	1 oz.
2. For five minute period after vehicle motion ceases	0	5 oz.
3. For next 25 minutes	0	1 oz./1 min.

SOLVENT SPILLAGE DETAILS :

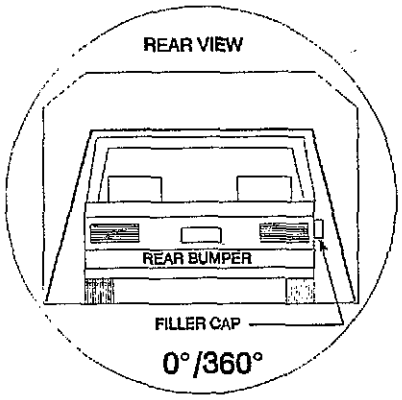
None

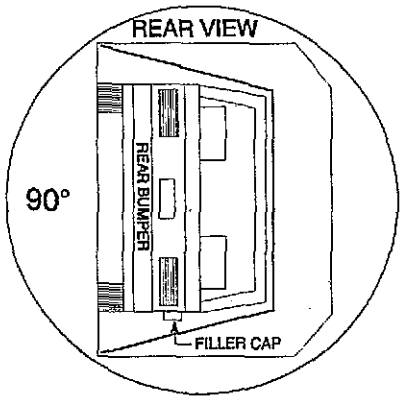
Table 14

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

TEST PHASE :
0-90 Deg.

Vehicle NHTSA ID No. :
CS5306





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time (Spec. Range = 1 to 3 minutes)		2	minutes	18	seconds
FMVSS 301 Position Hold Time +		5	minutes	00	seconds
	TOTAL	7	minutes	18	seconds
Next whole minute interval		8	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes FROM onset of rotation	6th min.	7th min.	8th min. if reqd.

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE :

0	0	0	0

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S) :

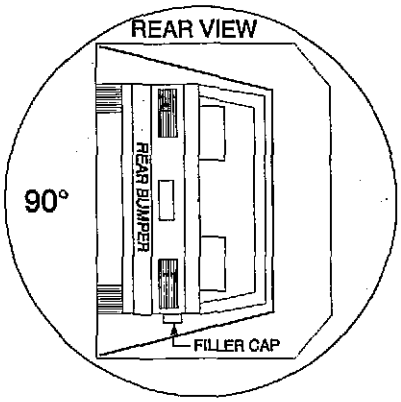
None

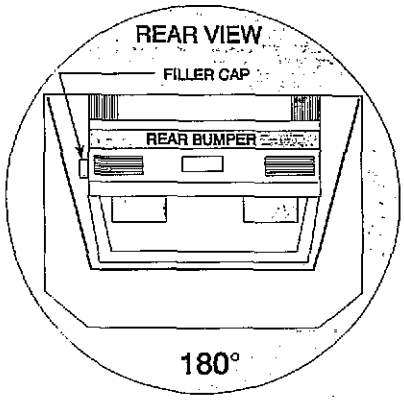
Table 14

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (cont.)

TEST PHASE :
90-180 Deg.

Vehicle NHTSA ID No. :
CS5306





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time (Spec. Range = 1 to 3 minutes)		1	minutes	55	seconds
FMVSS 301 Position Hold Time +		5	minutes	00	seconds
	TOTAL	6	minutes	55	seconds
Next whole minute interval		7	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes FROM onset of rotation	6th min.	7th min.	8th min. if reqd.

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE :

0	0	0	N/A

Note: Record spillage for whole minute intervals only as determined above.

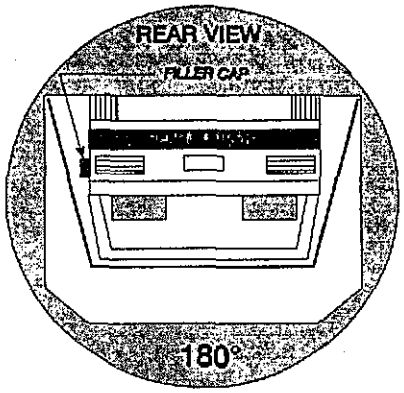
IV. SOLVENT SPILLAGE LOCATION(S) :

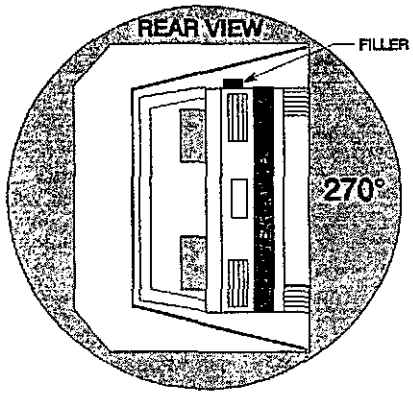
None

Table 14
FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (cont.)

TEST PHASE :
180-270 Deg.

Vehicle NHTSA ID No. :
CS5306





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time (Spec. Range = 1 to 3 minutes)	2	minutes	01	seconds
FMVSS 301 Position Hold Time +	5	minutes	00	seconds
TOTAL	7	minutes	01	seconds
Next whole minute interval	8	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes FROM onset of rotation	6th min.	7th min.	8th min. if reqd.

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE :

0	0	0	0

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S) :

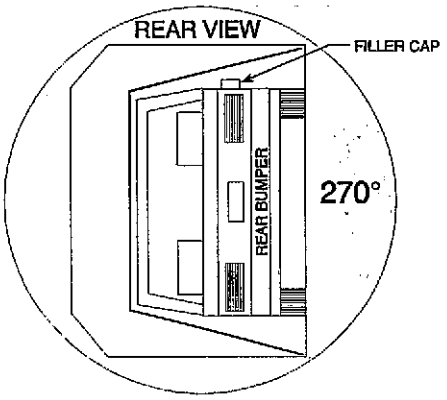
None

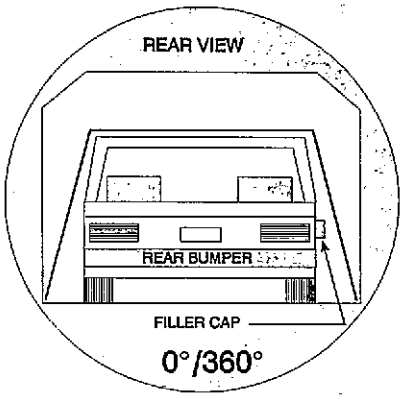
Table 14

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (cont.)

TEST PHASE :
270-360 Deg.

Vehicle NHTSA ID No. :
CS5306





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time (Spec. Range = 1 to 3 minutes)	1	minutes	51	seconds
FMVSS 301 Position Hold Time +	5	minutes	00	seconds
TOTAL	6	minutes	51	seconds
Next whole minute interval	7	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes FROM onset of rotation	6th min.	7th min.	8th min. if reqd.

(2) Maximum Allowable Solvent Spillage

5 ounces	1 ounce	1 ounce	1 ounce

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE :

0	0	0	N/A

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S) :

None

Table 15

POST TEST AIR BAG DATA

NHTSA No. : CS5306; Test Date: February 15, 1995; Technician: R. E.

Vehicle Model Year/Make/Model: 1995 Honda Odyssey EX

A. No. of vent holes: 2 -Driver 2 -Passenger

B. Size of vent holes: ($In.^2$) 1.8 -Driver 3.1 -Passenger

C. Total vent area: ($In.^2$) 3.53 -Driver 6.28 -Passenger

D. Deflated air bag length and width dimensions or, if round,diameter. (In inches)

Driver: - -Length; - -Width; 25.5 -Diameter

Passenger: 29.0 -Height; 15.5 -Width; 20.0 -Depth

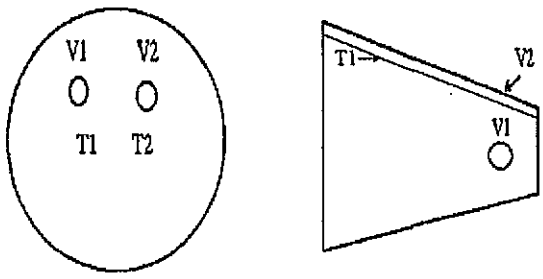
E. Is the air bag tethered?

Driver: √ -Yes; - -No; If yes, record length of tether- 9.5

Passenger: √ -Yes; - -No; If yes, record length of tether- 9.5

Sketch the air bag showing the location of the vent holes, how the bag is tethered, and where the bag is tethered. Also describe how the tethers are attached to the bag and the steering wheel.
(Note: Not to scale; V_n = Vent $hole_n$, T_n = $Tether_n$).

Driver Air bag (front view) Passenger Air bag (right side view)



F. Record part numbers and manufacturer name of the air bag and gas generator.

Driver: Air bag: BBT6003 / 4SS94X827 / 281094 / 2205065

Generator: HWEC01145 / M/D 1194 / 77800-SX0-A90 / J18 / 50170

Passenger: Air bag: 9WEQX1360

Generator: 77850-SX0-A810 04 / M/D 1194 / PWE3Y357640

G. Cut out a 6 inch by 6 inch swatch of the bag material and at least one tether from each bag, mark the vehicle's NHTSA number on the swatch, and send these parts to the COTR with the test report.

Table 16

ACCIDENT INVESTIGATION DIVISION DATA

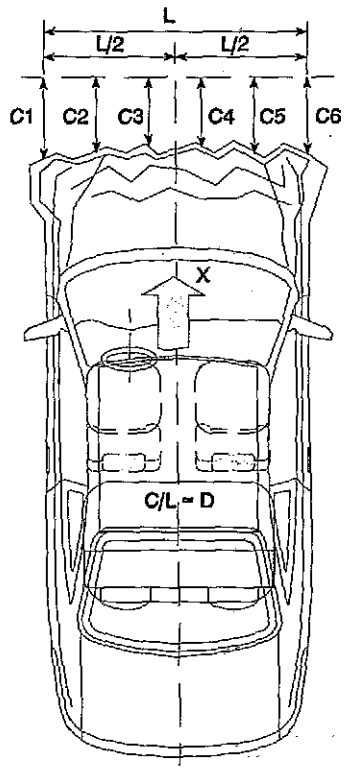
VEHICLE YEAR/MAKE/MODEL/BODY STYLE:	1995 Honda Odyssey EX 5-door Mini Van				
VEHICLE NHTSA NO. :	CS5306	VIN NO. :	JHMRA1872SC000867		
WHEELBASE:	111.4 in.	BUILD DATE:	11/94	TEST DATE:	February 15, 1995
VEH SIZE CATEGORY:	Mini Van			TEST WEIGHT:	3915 lbs.
FRONT OVERHANG:	-			OVERALL WIDTH:	70.3 in.
COLLISION DEFORMATION (CDC) CODE:	12FDEW2				
IMPACT MODE:	FRONTAL BARRIER				

CRUSH DEPTH DIMENSIONS: (Inches)

C1 =	11.9	C4 =	19.3
C2 =	17.3	C5 =	17.2
C3 =	19.4	C6 =	12.0

MIDPOINT OF DAMAGE: D=
(Vehicle Longitudinal Centerline) 31.15

LENGTH OF DAMAGE
REGION: L= 62.3



Remarks: None

Table 17
TEST VEHICLE NONCOMPLIANCE NOTICE

NHTSA Contract Lab : Calspan Advanced Technology Center

Lab Project Manager & Telephone No. : David J. Travale (716) 632 - 7500

Date of Test : February 15, 1995 Vehicle NHTSA No. : CS5306

Vehicle Manufacturer : HONDA MOTOR COMPANY, LTD., JAPAN

Model Year : 1995 VIN : JHMRA1872SC000867

Model : Odyssey EX Body Style: 5-door Mini Van Build Date : 11/94

Dummy Stabilized Temperature at Time of Test : 70 °F (Spec. = 69 - 72 °F)

Impact Velocity : 28.9 mph; Time of Test : 11:30

Type of Automatic Restraint System :

Driver : Air bag

Passenger : Air bag

Failure Details :

"The vehicle, as tested, appears to comply with the requirement of FMVSS Nos. 208, 212, 219 (partial), and 301."

Table 17
TEST VEHICLE NONCOMPLIANCE NOTICE

NHTSA Contract Lab : Calspan Advanced Technology Center

Lab Project Manager & Telephone No. : David J. Travale (716) 632 - 7500

Date of Test : February 15, 1995 Vehicle NHTSA No. : CS5306

Vehicle Manufacturer : HONDA MOTOR COMPANY, LTD., JAPAN

Model Year : 1995 VIN : JHMRA1872SC000867

Model : Odyssey EX Body Style: 5-door Mini Van Build Date : 11/94

Dummy Stabilized Temperature at Time of Test : 70 °F (Spec. = 69 - 72 °F)

Impact Velocity : 28.9 mph; Time of Test : 11:30

Type of Automatic Restraint System :

Driver : Air bag

Passenger : Air bag

Failure Details :

"The vehicle, as tested, appears to comply with the requirement of FMVSS Nos. 208, 212, 219 (partial), and 301."

Appendix A

PHOTOGRAPHS

Appendix A

PHOTOGRAPHS

LIST OF PHOTOGRAPHS

Figure A-1 PRE-TEST FRONT VIEW

Figure A-2 POST-TEST FRONT VIEW

Figure A-3 PRE-TEST LEFT SIDE VIEW

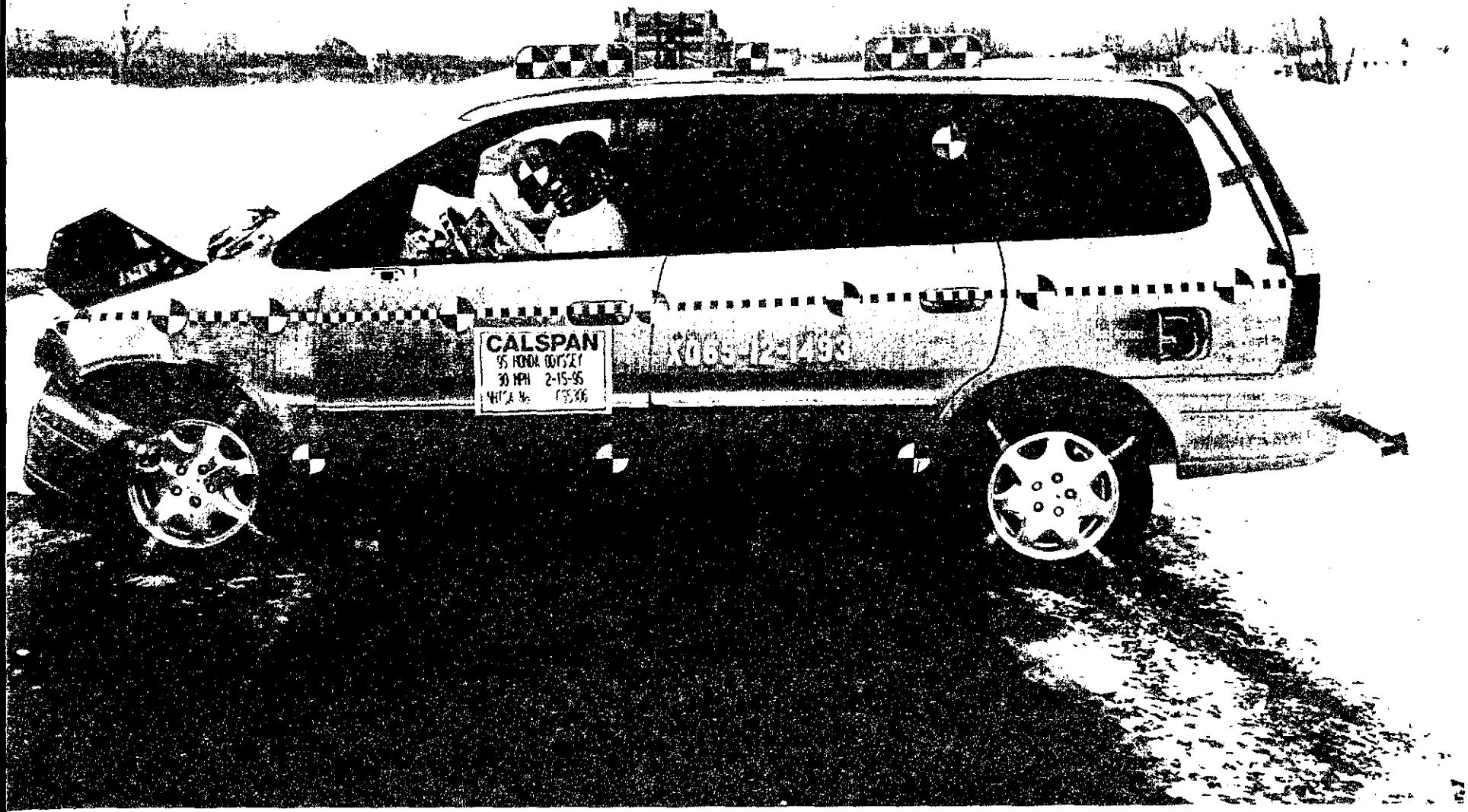


Figure A-4 POST-TEST LEFT SIDE VIEW

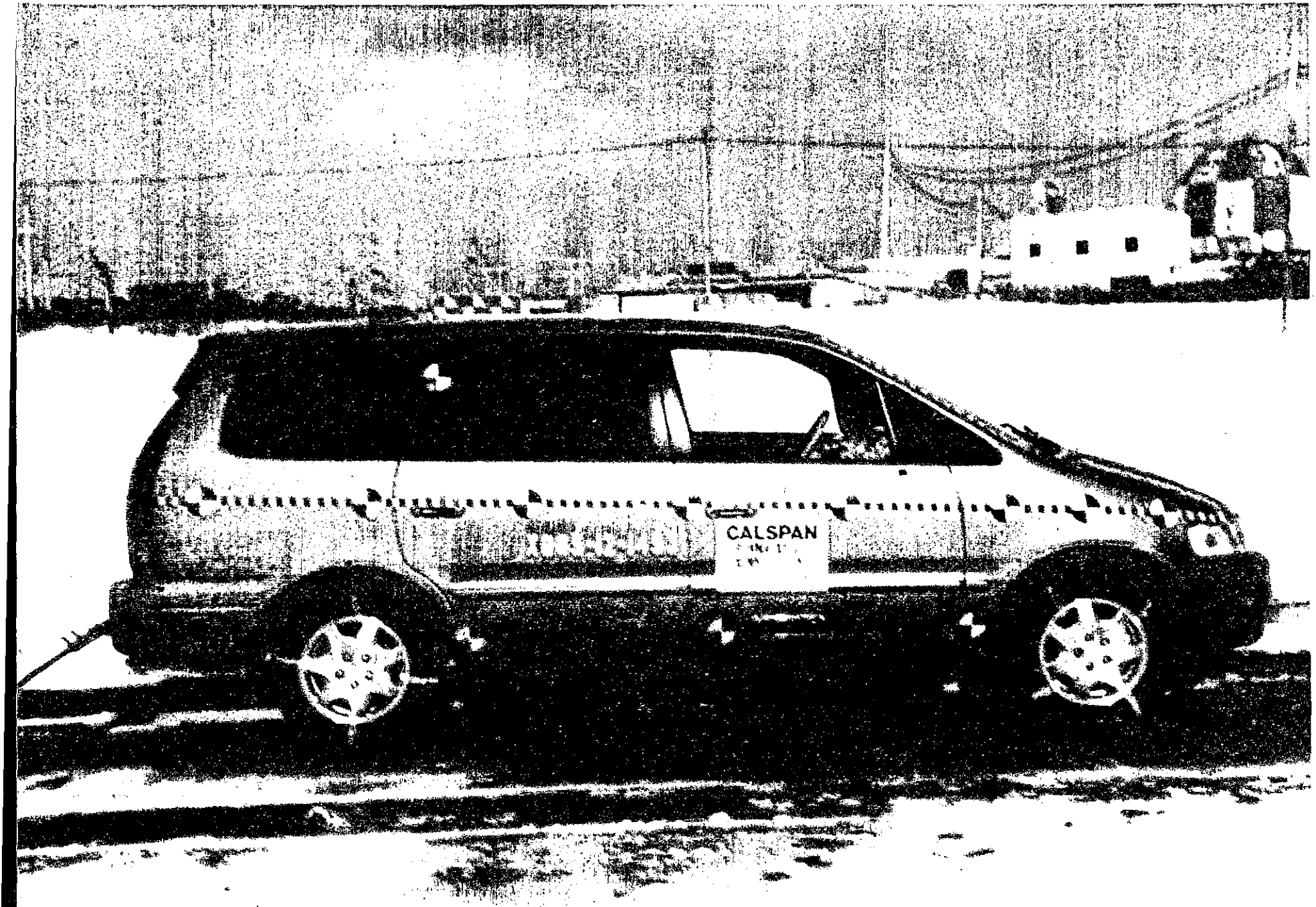


Figure A-5 PRE-TEST RIGHT SIDE VIEW

Figure A-6 POST-TEST RIGHT SIDE VIEW

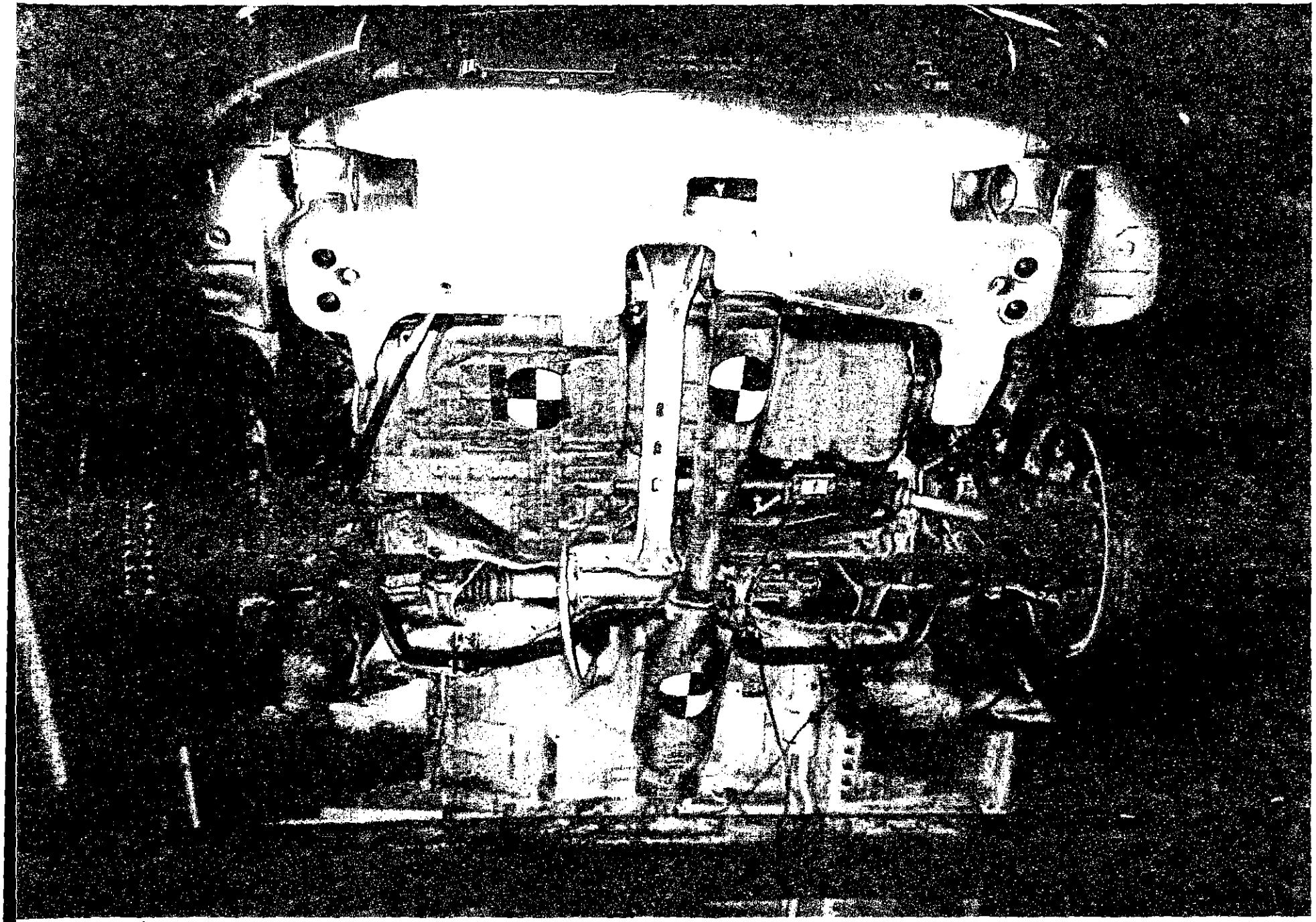


Figure A-7 PRE TEST FRONT UNDERBODY VIEW

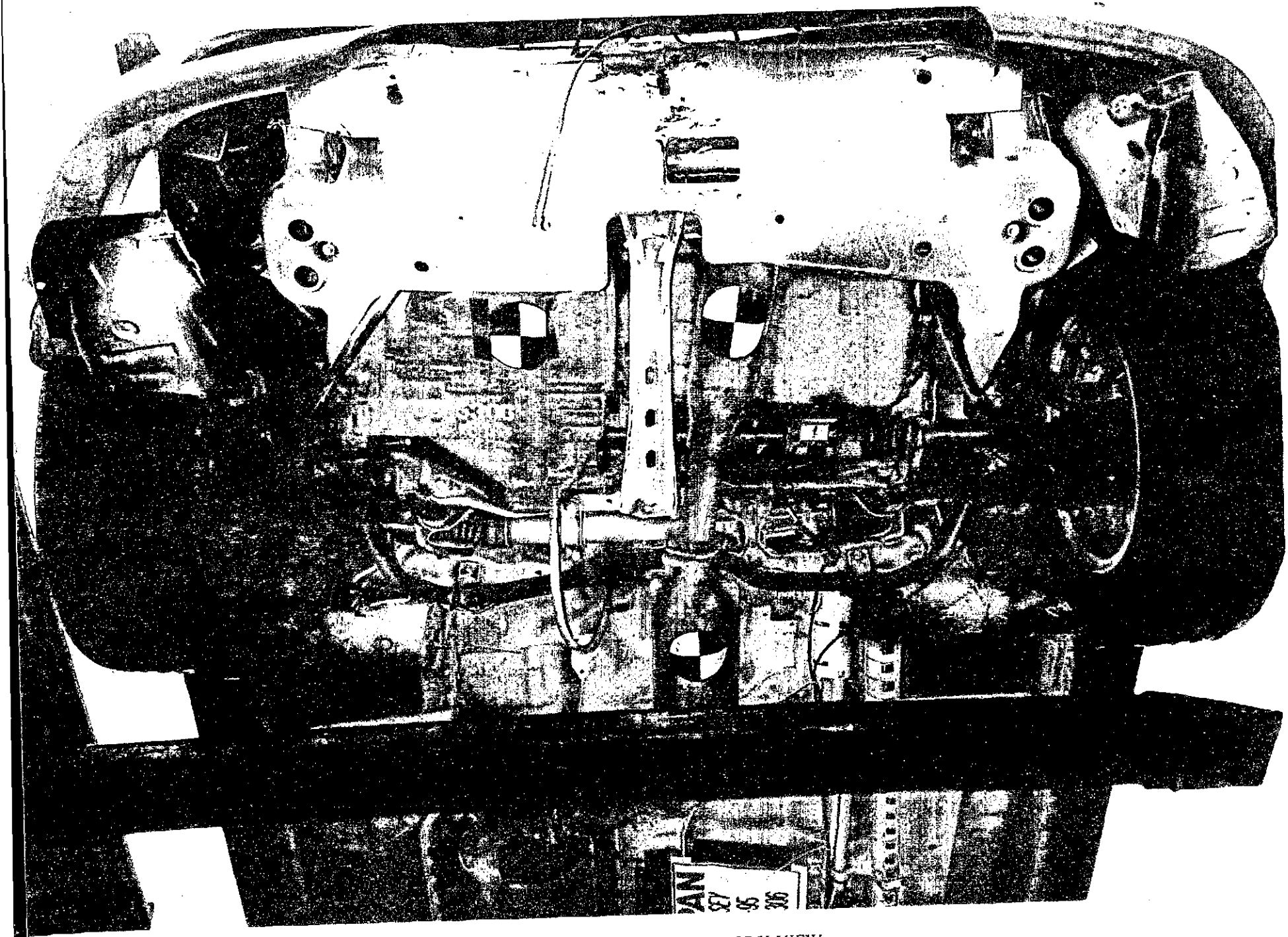
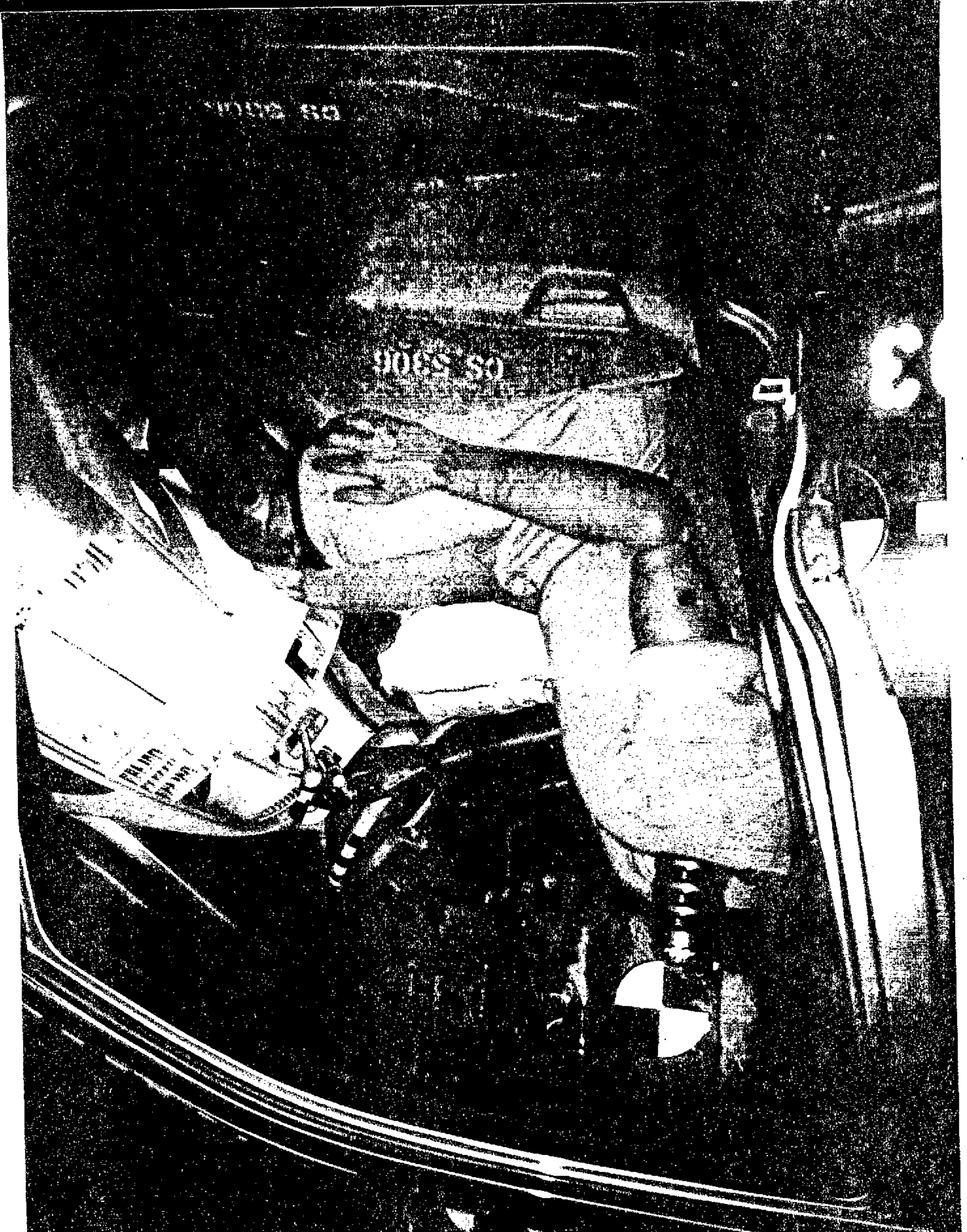


Figure A-8 POST-TEST FRONT UNDERBODY VIEW




CS 5306

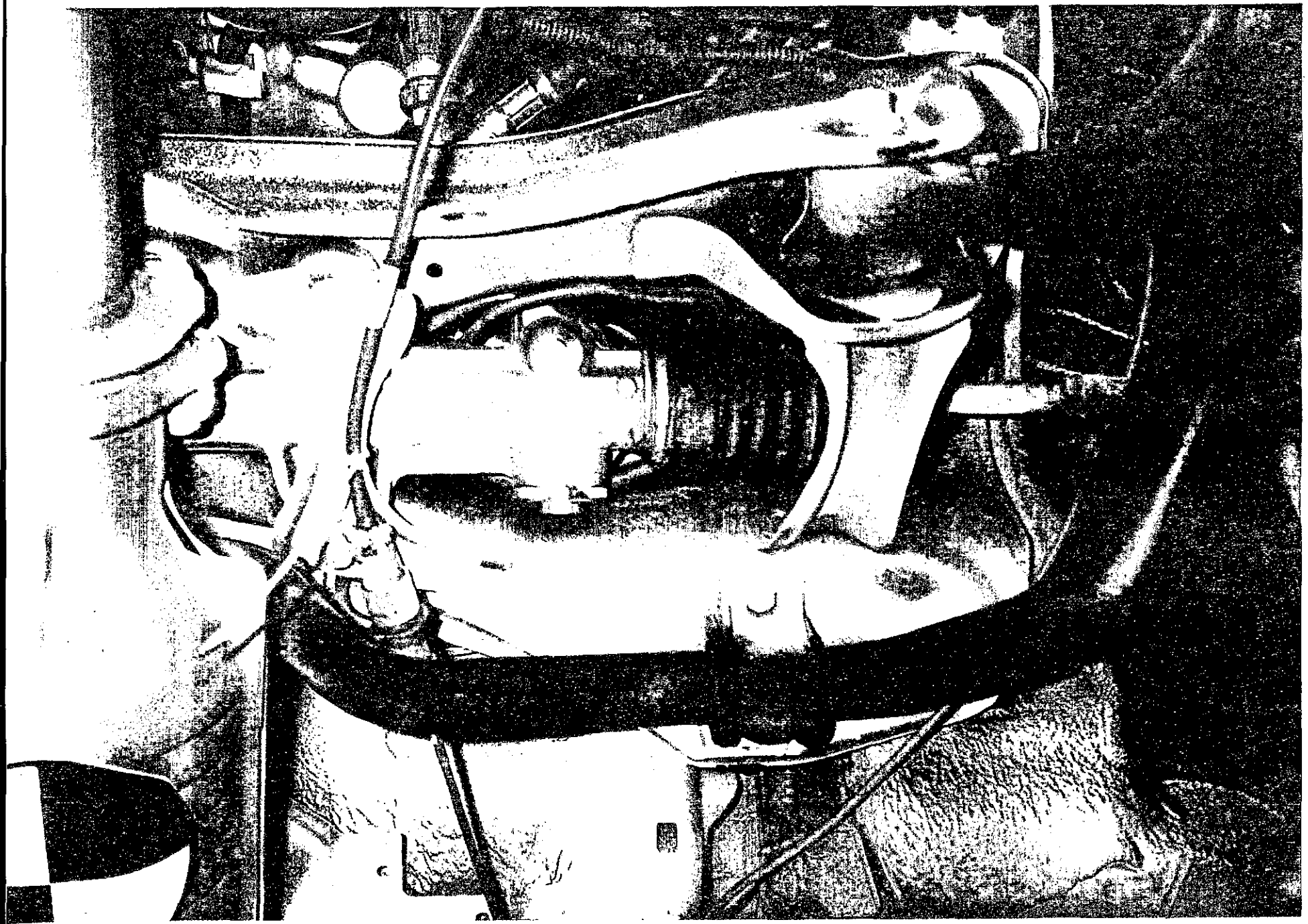


Figure A-13 PRE-TEST UNDERBODY STEERING SHAFT

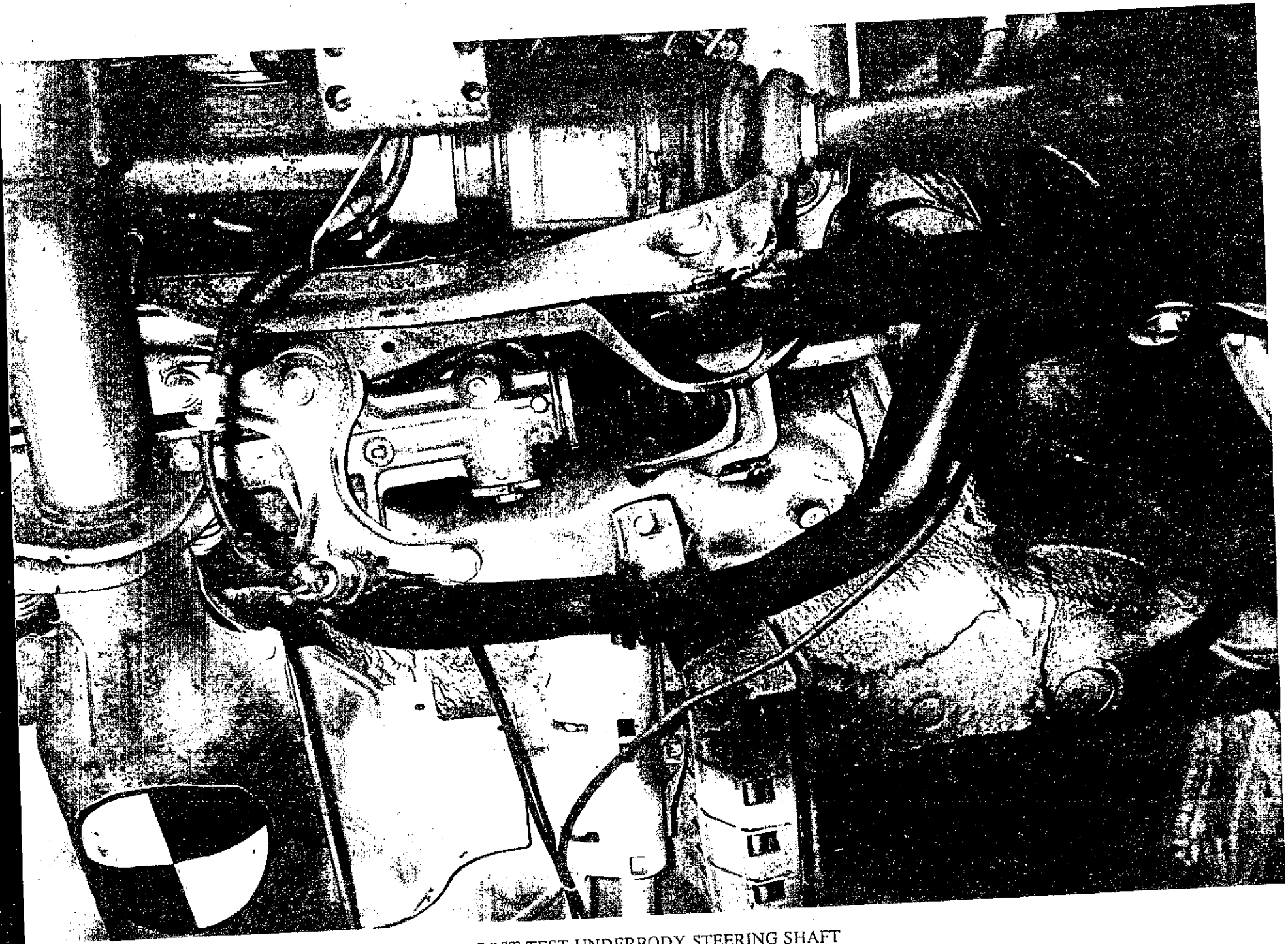


Figure A-14 POST-TEST UNDERBODY STEERING SHAFT

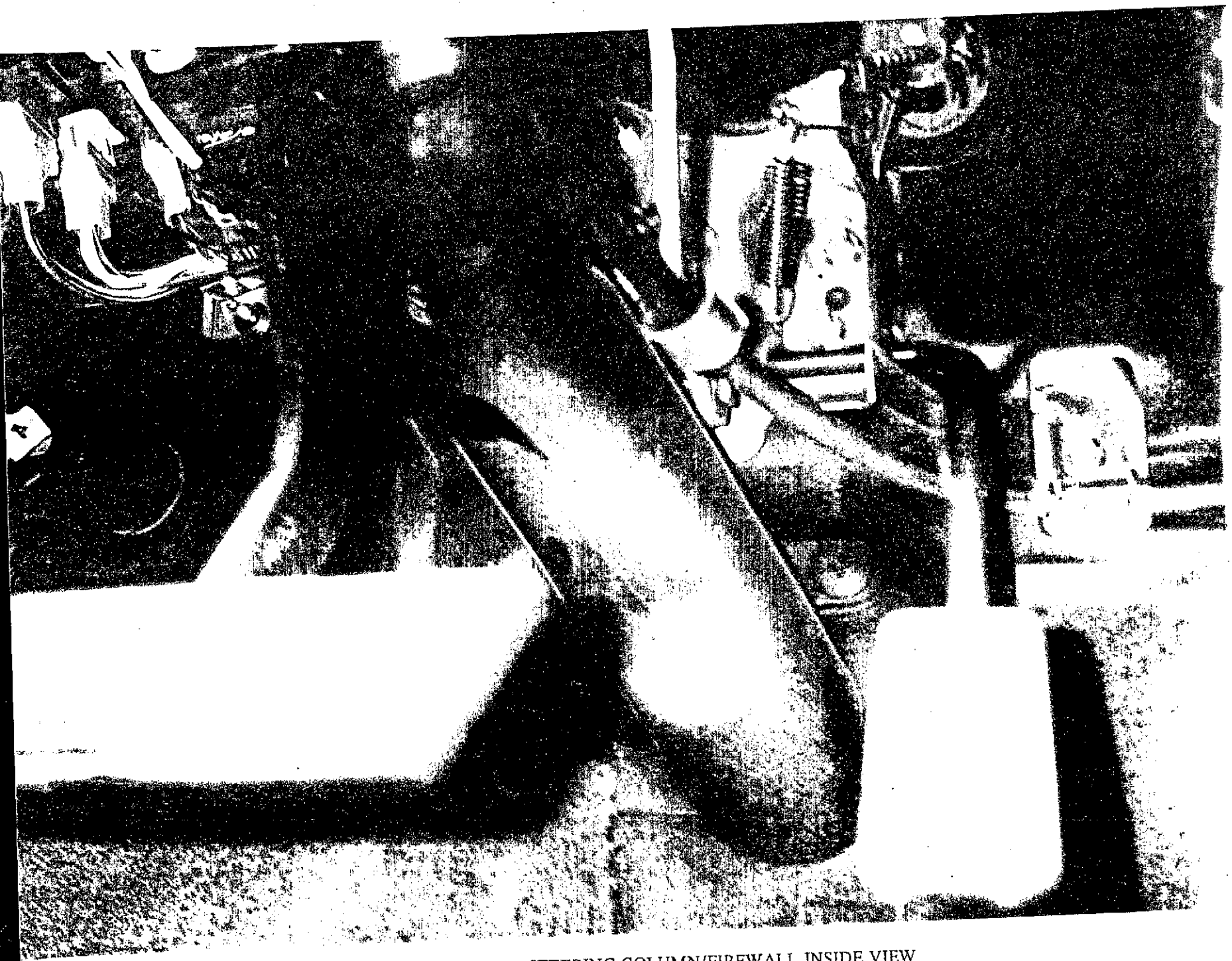


Figure A-15 PRE-TEST STEERING COLUMN/FIREWALL INSIDE VIEW

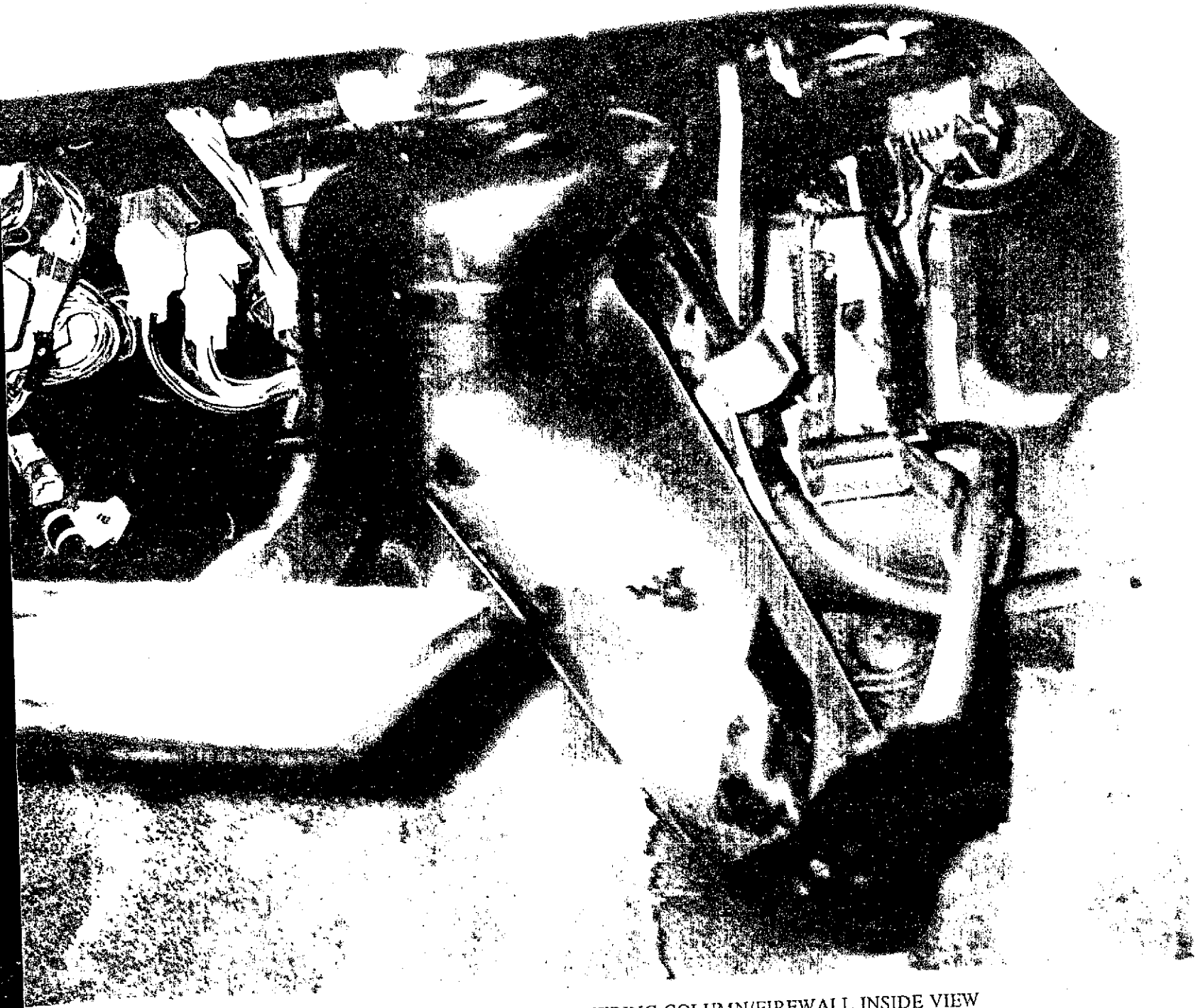


Figure A-16 POST-TEST STEERING COLUMN/FIREWALL INSIDE VIEW

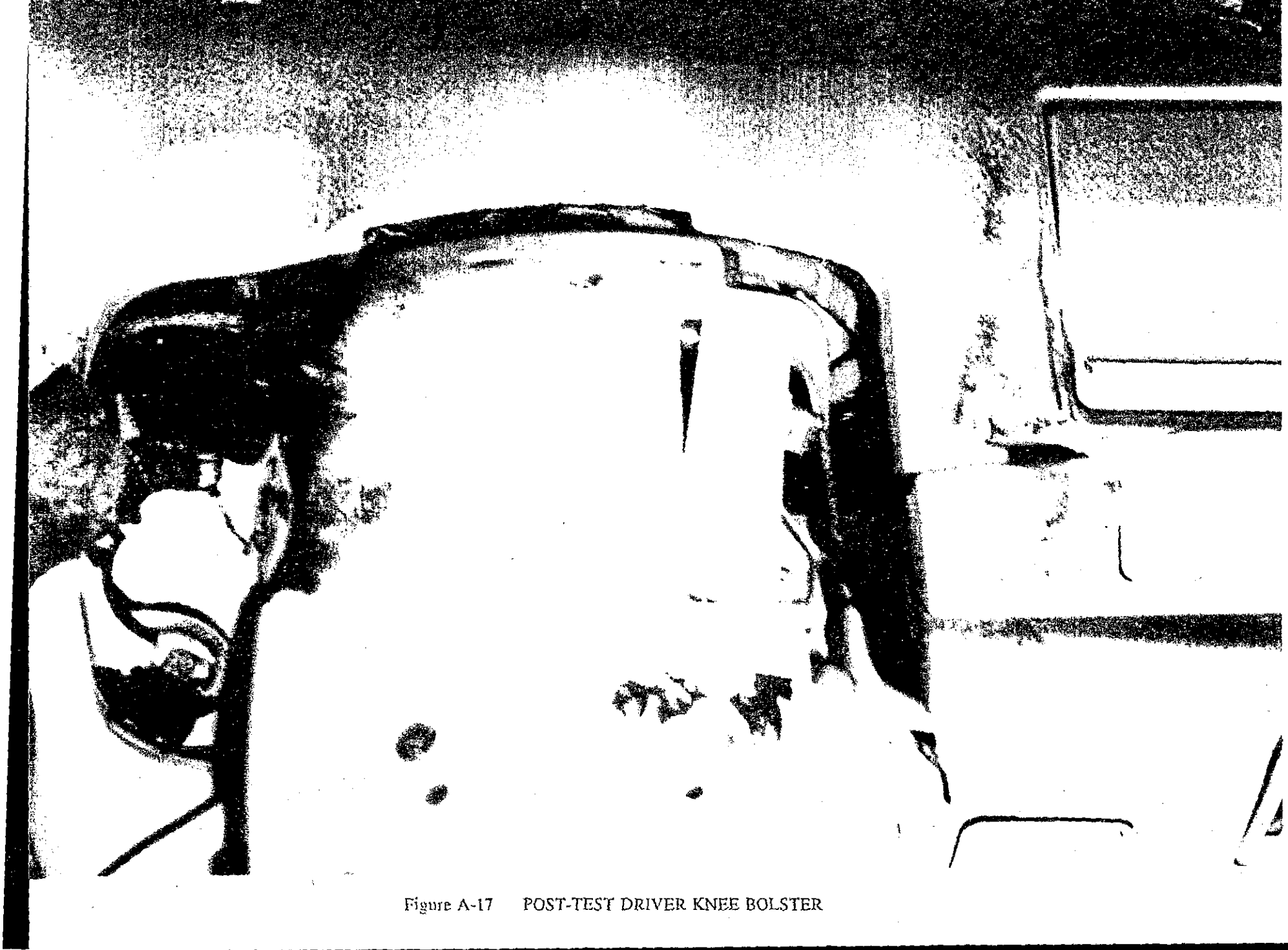


Figure A-17 POST-TEST DRIVER KNEE BOLSTER

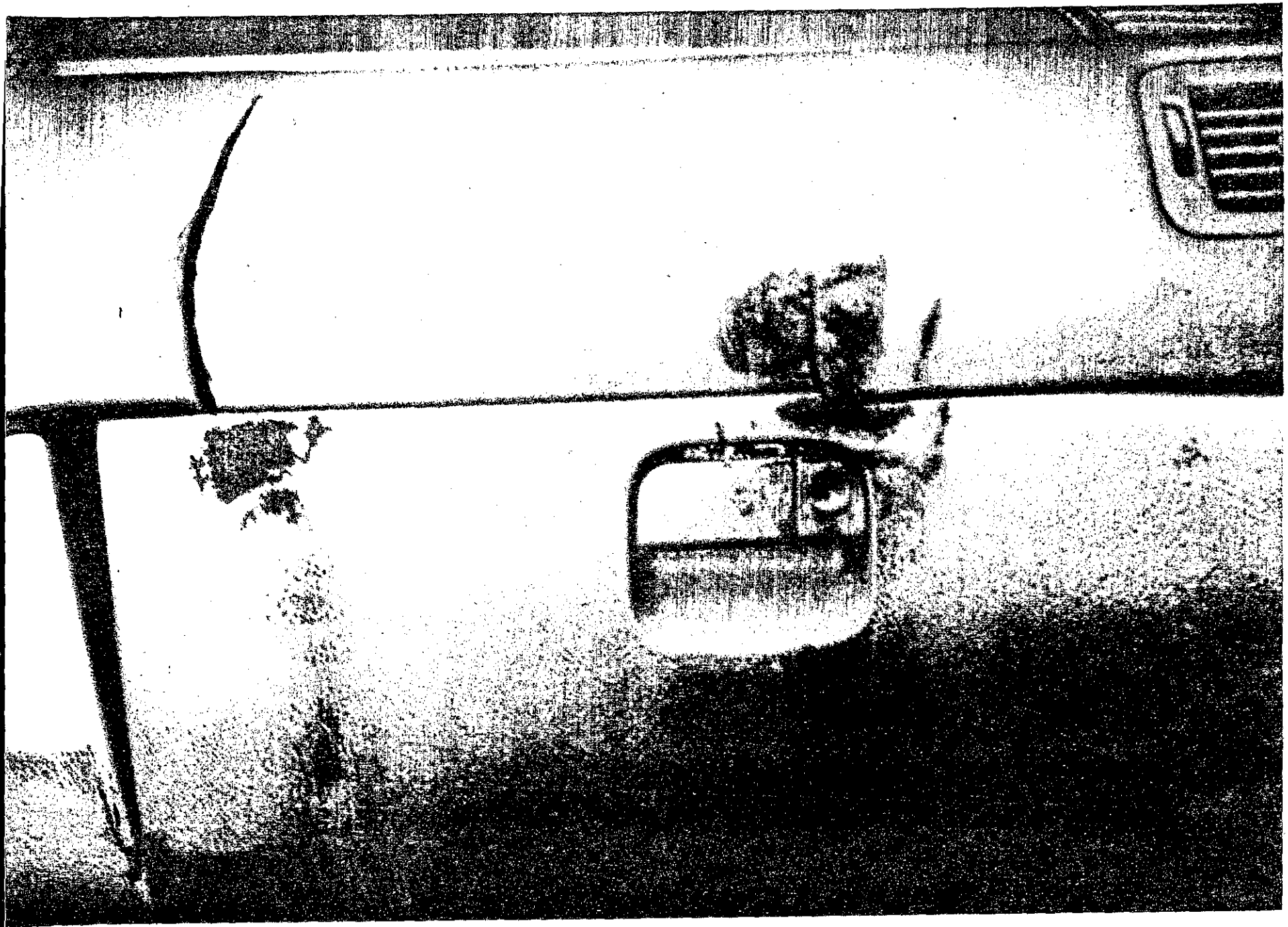


Figure A-18 POST-TEST PASSENGER KNEE BOLSTER

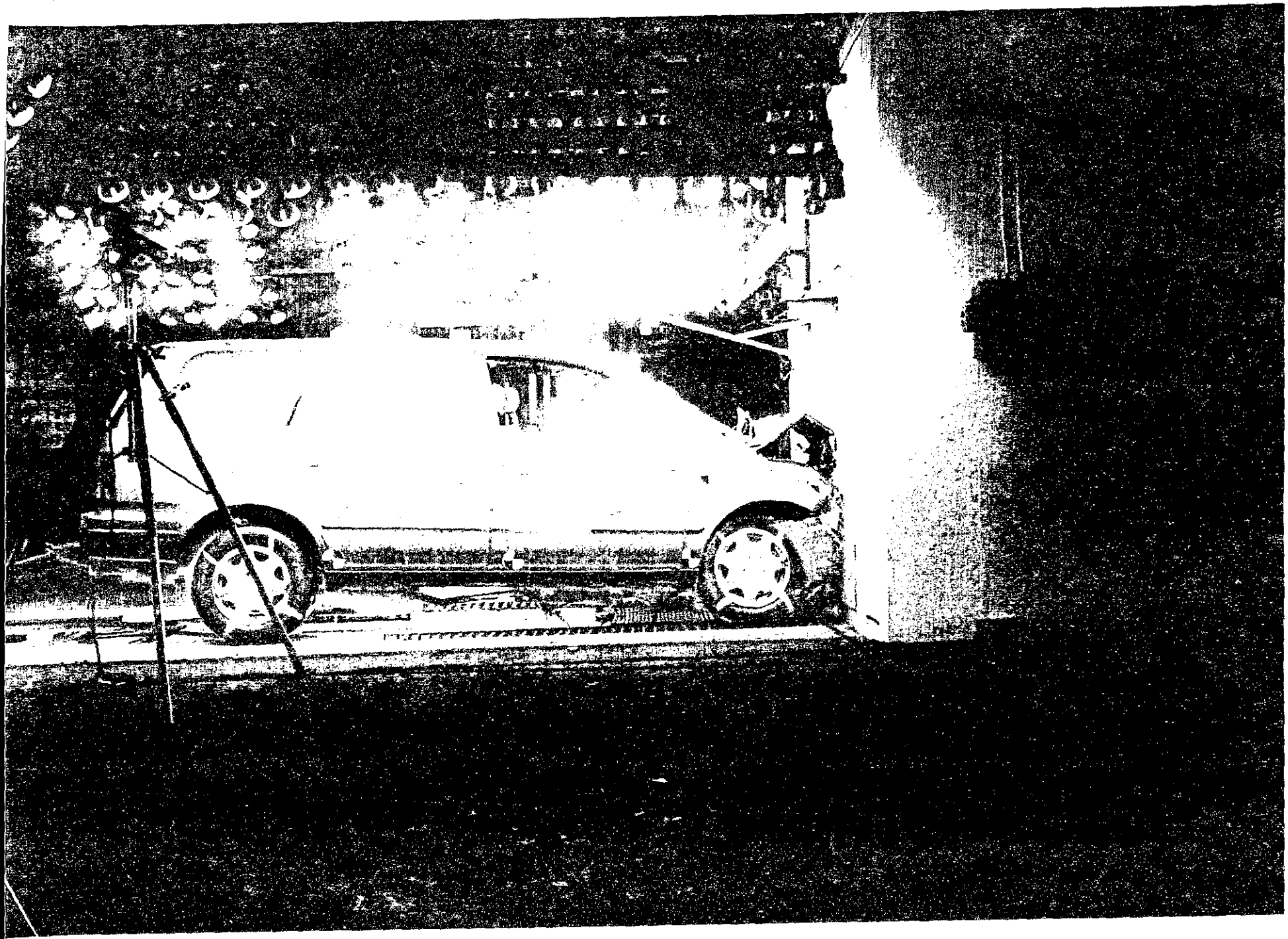


Figure A-19 VEHICLE IMPACT

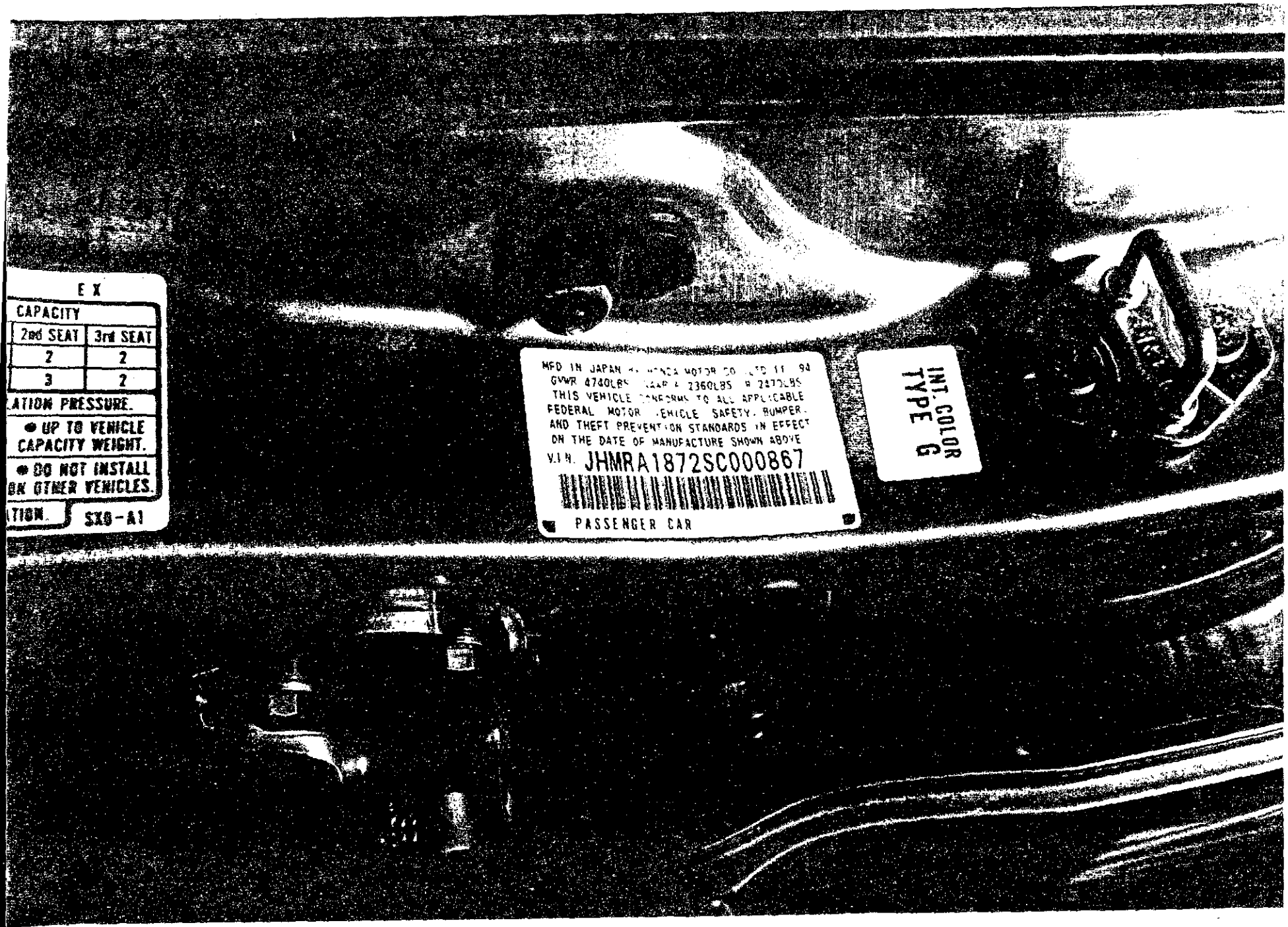


Figure A-20 CERTIFICATION PLACARD

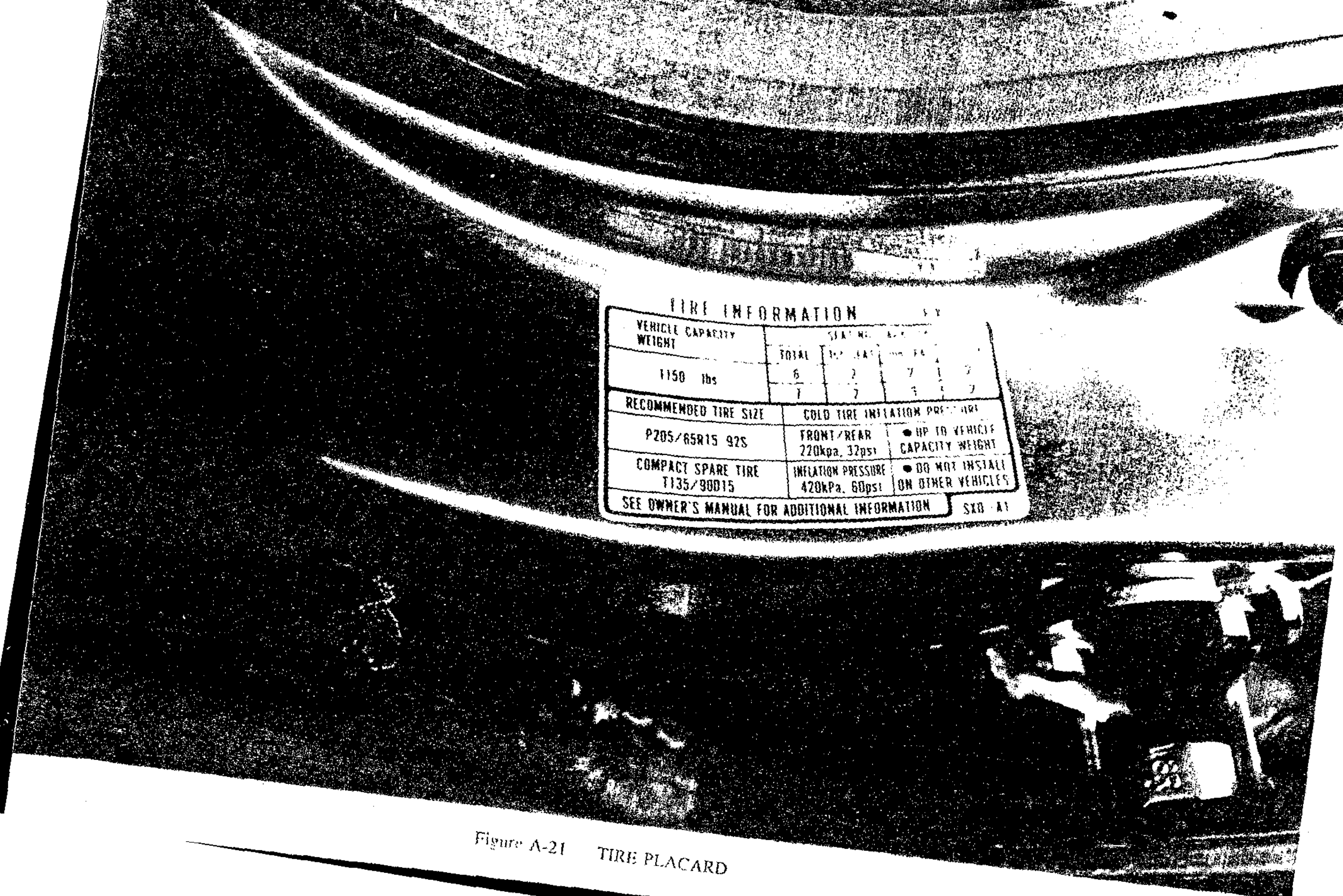


Figure A-21 TIRE PLACARD

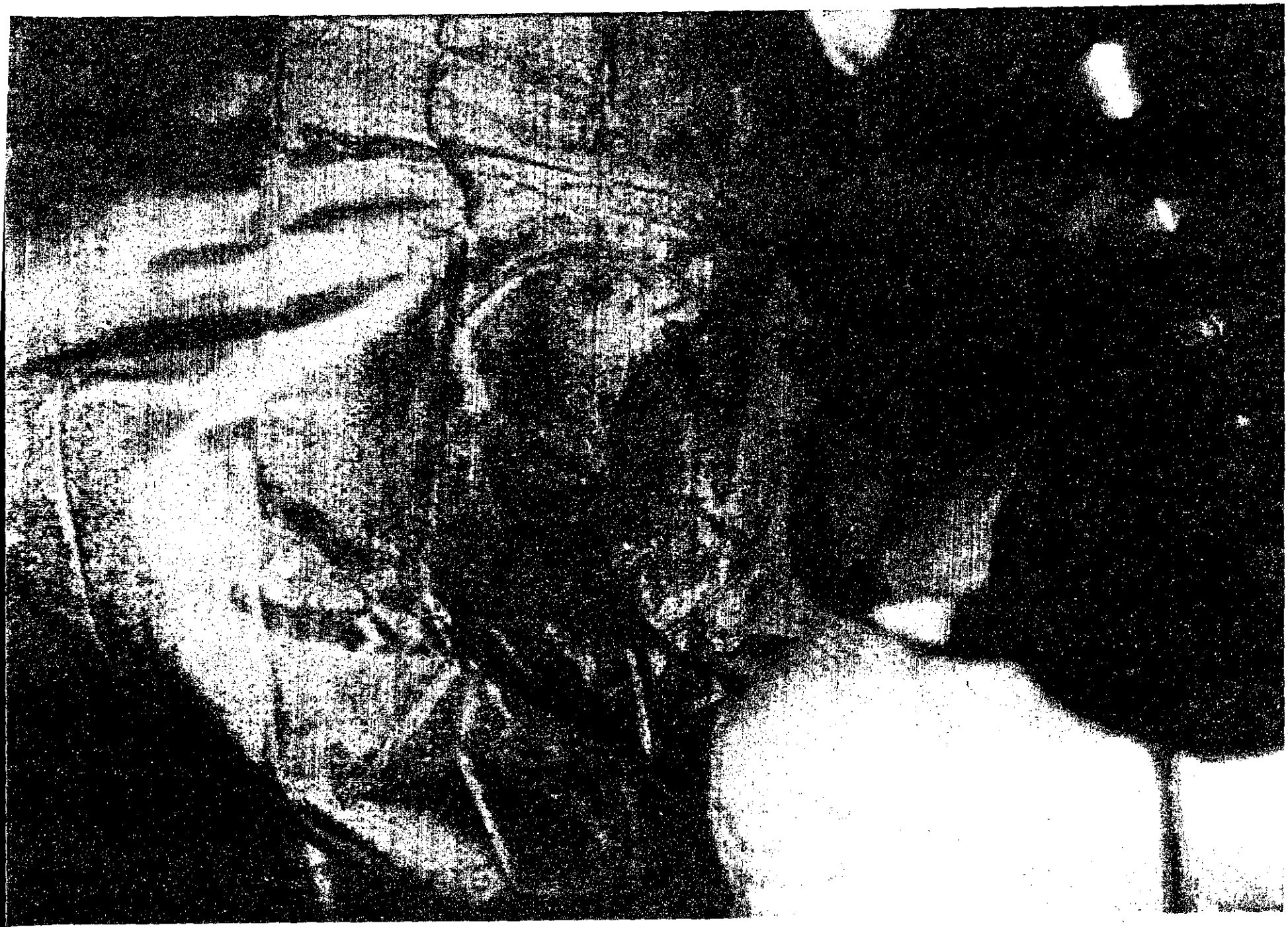


Figure A-22 POST-TEST DRIVER AIRBAG VIEW

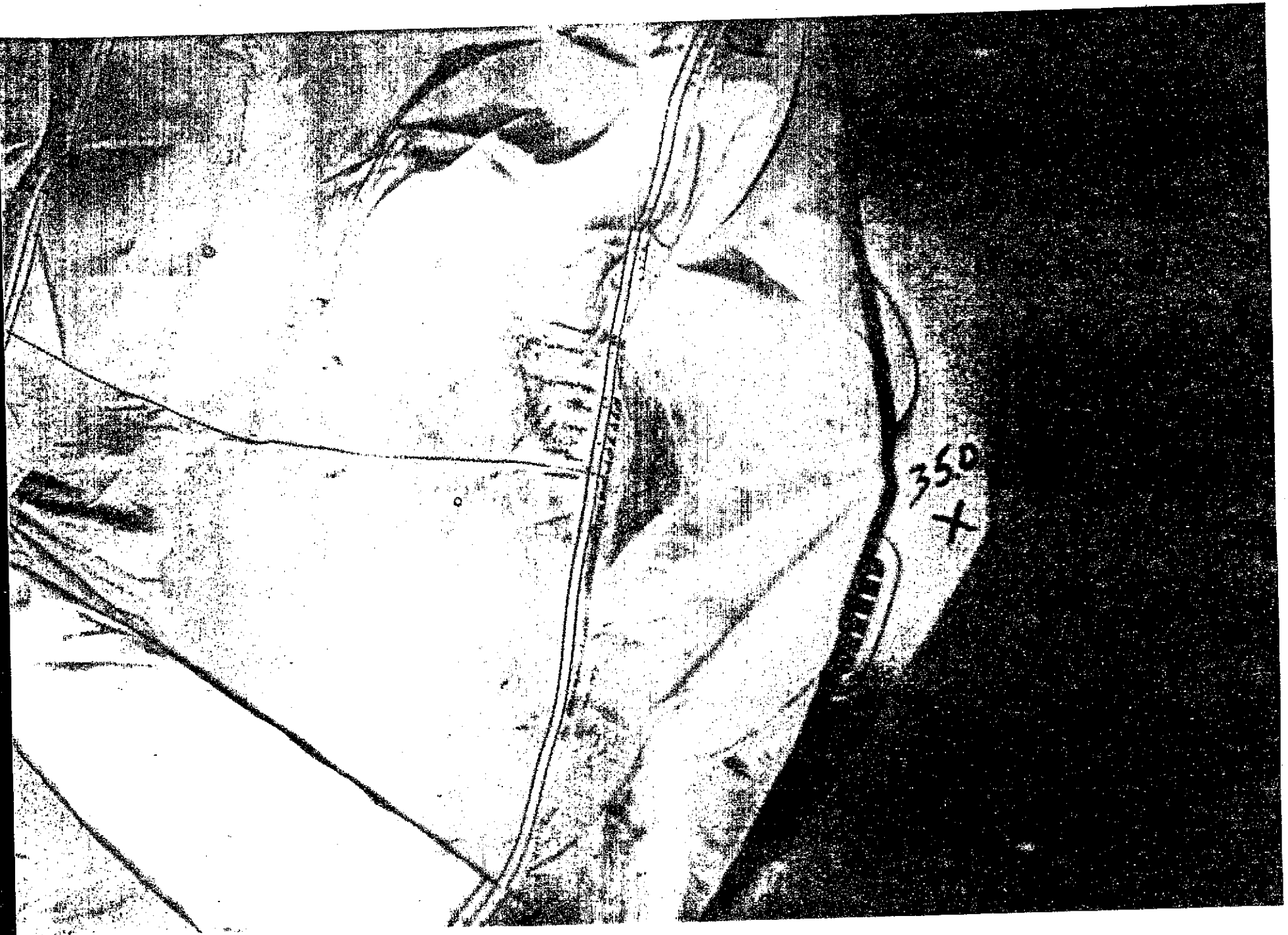


Figure A-23 POST-TEST PASSENGER AIRBAG VIEW

Appendix C

VEHICLE OWNERS MANUAL OCCUPANT RESTRAINT SYSTEM INSTRUCTIONS

Why Wear Seat Belts

Wearing seat belts, and wearing them properly, is fundamental to your safety and the safety of your passengers.

During a crash or emergency stop, seat belts can help keep you from being thrown against the inside of the car, against other occupants, or out of the car.

Of course, seat belts cannot completely protect you in every crash. But, in most cases, seat belts reduce your chance of serious injury. They can even save your life. That is why many states and all Canadian provinces require you to wear seat belts.

⚠ WARNING

Not wearing a seat belt increases the chance of being killed or seriously hurt in a crash.

Be sure you and your passengers always wear seat belts and wear them properly.

Important Safety Reminders

Seat belts are designed for adults and larger children. All infants and small children must be properly restrained in child safety seats (see page 20).

Never let passengers ride in the cargo area or on top of a folded-down seat. Carry passengers in the rear only when they are sitting in a locked, upright seat, and are properly restrained by seat belts.

Passengers should not stand up or change seats while the vehicle is moving. If they are not wearing seat belts during a crash or emergency stop, they can be thrown against the inside of the vehicle, against other occupants, or out of the vehicle.
A pregnant woman needs to wear a seat belt to protect herself and her unborn child (see page 10).

Two people should never use the same seat belt. If they do, they could be very seriously injured in a crash.

Do not place the shoulder portion of a lap/shoulder belt under your arm or behind your back. This could increase the chance of serious injuries in a crash.

Do not put shoulder belt pads or other accessories on seat belts. They can reduce the effectiveness of the belts and increase the chance of injury.

The Seat Belt System and How It Works

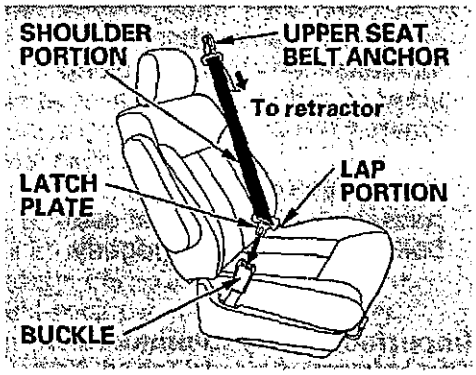
Seat Belt System Components

Your Honda has seat belts in all seating positions. All the seat belts in the six-passenger model are lap/shoulder belts. In the seven-passenger model, the center position of the bench-type second seat has a lap belt.

Your seat belt system also includes a light on the instrument panel to remind you to fasten your seat belt, and to make sure your passengers fasten theirs. This light comes on when you turn on the ignition if you have not fastened your seat belt. A beeper also sounds for several seconds (see page 36).

The following pages cover more about the seat belt components and how they work.

Lap/Shoulder Belt

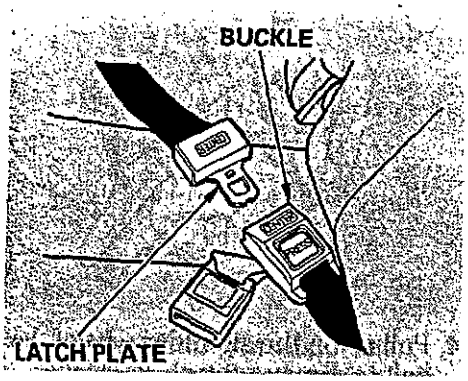


This style of seat belt has a single belt that goes over your shoulder, across your chest, and across your hips.
Each lap/shoulder belt has an emergency locking retractor. In normal driving, the retractor lets you move freely in your seat while it keeps some tension on the belt. During a collision or sudden stop, the retractor automatically locks the belt to help restrain your body.

The lap/shoulder belt retractor in each passenger seating position has an additional locking mechanism that is intended to secure a child seat (see page 25). If the shoulder part of the belt is pulled all the way out, this mechanism will engage. The belt will retract, but it will not allow the passenger to move freely. If the belt feels too tight, unlatch it, let it retract fully, then pull it out as far as needed.

Lap Belt

Seven-passenger model only



The lap belt has one manually-adjusted belt that fits across the hips. It is similar to safety belts used in airplanes.

Wearing Seat Belts Properly

You can increase the effectiveness of your seat belts if you take a little time to read the following pages and make sure you know how to wear seat belts properly.

⚠ WARNING

Not wearing a seat belt properly increases the chance of serious injury or death in a crash.

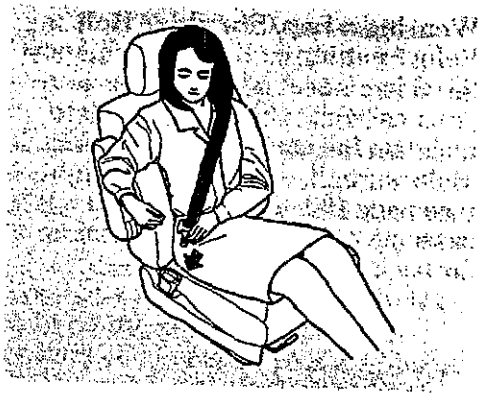
Be sure you and your passengers always wear seat belts and wear them properly.

Wearing a Lap/Shoulder Belt

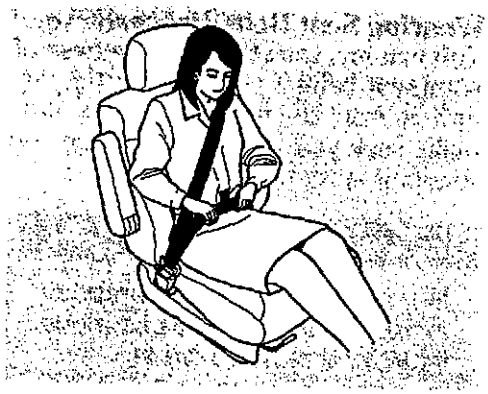
Before putting on the seat belt, move the driver's seat as far back as is practical while still allowing you to maintain full control of the vehicle. Make sure the seat-back is upright (see page 18). The front seat passenger should move the seat as far back as possible.

CONTINUED

The Seat Belt System and How It Works



1. Pull the latch plate across your body and insert it into the buckle. Tug on the belt to make sure the latch is securely locked.



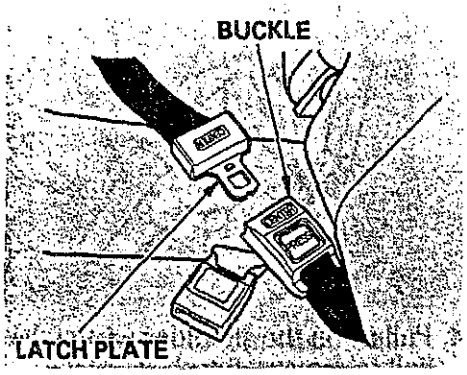
2. Check that the belt is not twisted.

3. Position the lap portion of the belt as low as possible across your hips, not across your stomach. This lets your strong pelvic bones take the force of a crash.

4. Pull up on the shoulder part of th belt to remove any slack. Make sure the belt goes over your collarbone and across your chest

Lap Belt

Seven-passenger model only



The lap belt has one manually-adjusted belt that fits across the hips. It is similar to safety belts used in airplanes.

Wearing Seat Belts Properly

You can increase the effectiveness of your seat belts if you take a little time to read the following pages and make sure you know how to wear seat belts properly.

⚠ WARNING

Not wearing a seat belt properly increases the chance of serious injury or death in a crash.

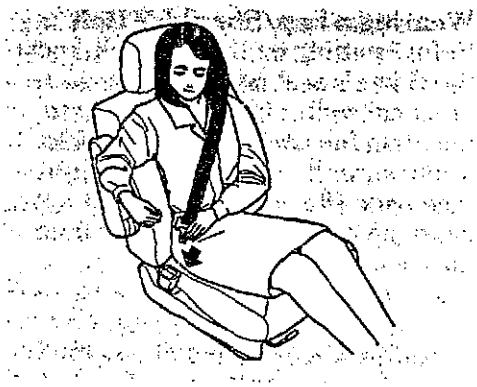
Be sure you and your passengers always wear seat belts and wear them properly.

Wearing a Lap/Shoulder Belt

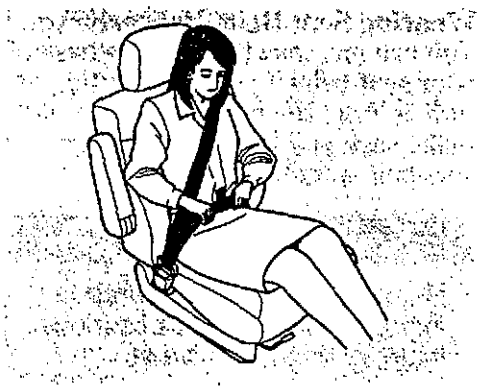
Before putting on the seat belt, move the driver's seat as far back as is practical while still allowing you to maintain full control of the vehicle. Make sure the seat-back is upright (see page 18). The front seat passenger should move the seat as far back as possible.

CONTINUED

The Seat Belt System and How It Works



1. Pull the latch plate across your body and insert it into the buckle. Tug on the belt to make sure the latch is securely locked.



2. Check that the belt is not twisted.

3. Position the lap portion of the belt as low as possible across your hips, not across your stomach. This lets your strong pelvic bones take the force of a crash.

4. Pull up on the shoulder part of th belt to remove any slack. Make sure the belt goes over your collarbone and across your chest

If possible, use the lap/shoulder seat belt, remembering to keep the lap portion as low as possible (see page 7).

Each time you have a check-up, ask your doctor if it's okay for you to drive and how you should position a lap/shoulder seat belt.

Seat Belt Maintenance
For safety, you should check the condition of your seat belts regularly.

Pull out each belt fully and look for frays, cuts, burns, and wear. Check that the latches work smoothly and the lap/shoulder belts retract easily. Any belt not in good condition or not working properly should be replaced.

If a seat belt is worn during a crash, have your dealer replace the belt and inspect the anchors for damage.

For information on how to clean your seat belts, see page 188 .

Supplemental Restraint System

Your car is equipped with a Supplemental Restraint System (SRS) to help protect the head and chest of the driver and front seat passenger during a severe frontal collision.

This system does not replace your seat belts. It supplements, or adds to, the protection offered by seat belts and other occupant protection features.

⚠ WARNING

Not wearing a seat belt increases the chance of serious injury or death in a crash, even if you have airbags.

Be sure you and your passengers always wear seat belts and wear them properly.

SRS Components
Your supplemental restraint system includes:

- One airbag in the steering wheel for the driver and another in the dashboard for the passenger.
- Sensors that can detect a severe frontal collision.
- A sophisticated electronic system that continually monitors the sensors, control unit, airbag activators, and all related wiring when the ignition is ON (II).
- An indicator light on the instrument panel to alert you to a possible problem with the system.
- Emergency backup power in case your car's electrical system is disconnected in a crash.

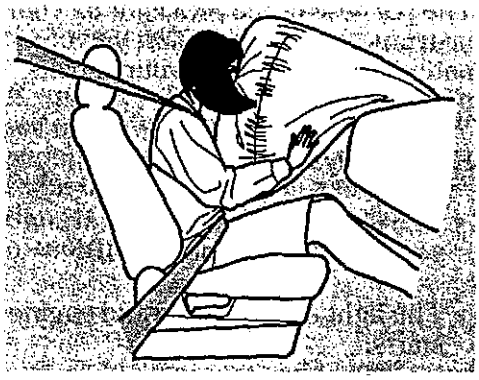
What Happens In a Crash
If you ever have a severe frontal collision, the sensors will detect rapid deceleration and signal the control unit to instantly inflate the airbags.

During a crash, your seat belts will help to restrain your lower body ar torso. The airbags will provide a cushion to absorb crash energy an help keep the head and chest of th driver and front passenger from striking the interior of the car.

After inflating, the airbags will immediately deflate. The entire process, from detection to deflatio takes a fraction of a second. This process occurs so quickly that you may not hear the loud noise create by the airbag inflators, or realize what has happened.

The driver's airbag is stored in the center of the steering wheel. For your safety, do not attach any items to the steering wheel. They could interfere with the proper operation of the airbag. Or, if the airbag inflates, they could be propelled inside the car and hurt someone.

How the Passenger's Airbag Works



If you ever have a severe frontal collision, the passenger's airbag will inflate at the same time as the driver's airbag.

This airbag is quite large and inflate with considerable force. It can seriously hurt a front seat passenge who is not in the proper position and wearing the seat belt properly. Fron seat passengers should move the seat as far back as practical and sit well back in the seat.

We strongly recommend that you d not put an infant seat in the front passenger's seat. If the airbag inflates, it can hit the infant seat wit great force. The infant seat can be dislodged or struck with enough force to cause very serious injury to the infant.

If a toddler seat is used in the front passenger's seat, the vehicle seat should be moved as far back as possible. If the passenger's bag inflates, it could seriously hurt a toddler who is not in the proper position or properly restrained.

CONTINUE

Supplemental Restraint System

The passenger's airbag is stored near the top of the dashboard, under a lid marked SRS. Do not place any objects on top of this lid. If the airbag inflates, those objects can be propelled inside the car and possibly hurt someone.

SRS How the SRS Indicator Light Works

The purpose of the SRS light on your instrument panel is to alert you of a potential problem with your supplemental restraint system.

Have the system checked if:

- The light does not come on when you turn the ignition ON (II).
- The light stays on after the engine starts.
- The light comes on or flashes while you are driving.

System Service

Your supplemental restraint syster is virtually maintenance-free. Ther are no parts you can safely service. You must have the system service by an authorized Honda dealer:

- If your airbags ever inflate, the airbags and control unit must be replaced. Do not try to remove o discard the airbags by yourself. This must be done by a Honda dealer.
- If the SRS indicator light alerts you of a problem. Have the supplemental restraint system checked as soon as possible. Otherwise, your airbags might n inflate when you need them.
- When the car is ten years old. Have the dealer inspect the system. The production date is o the driver's doorjamb for your convenience.

Appendix B

VEHICLE AND DUMMY RESPONSE DATA

NOTE : Data trace scales are automatically scaled at the request of the COTR. Use caution when reviewing data.

TEST NO. CS5306

VEHICLE

SAE FILTER CHANNEL CLASS

60

FACILITY: TRACK TEST DATE: 15 Feb 1995
RUN #: 1493 TEST TIME: 12:07:23
SERIES #: 16 BOARD: b

TITLE: 208 TEST #12 - 1995 HONDA ODYSSEY

CHANNEL NUMBER	DESCRIPTION	ENGR UNIT	MAXIMUM AMP	MAXIMUM msec	MINIMUM AMP	MINIMUM msec	FILTER CLASS
1	Left Rear X-member X	Gs	3.1	18.4	-34.5	49.0	60.0
2	Right Rear X-member X	Gs	1.7	133.8	-28.5	43.6	60.0
3	Engine Top X	Gs	53.3	42.6	-120.3	31.7	60.0
4	Engine Bottom X	Gs	23.4	47.8	-148.4	28.0	60.0
5	Right Brake Caliper X	Gs	19.0	47.8	-89.9	29.5	60.0
6	Left Brake Caliper X	Gs	23.6	49.3	-76.6	42.5	60.0
7	Instrument Panel X	Gs	4.7	98.8	-43.0	50.3	60.0
8	Pos. 1 Chest Disp.	in	.0	7.4	-2.2	86.2	180.0
9	Pos. 2 Chest Disp.	in	.1	84.0	-.7	107.0	180.0
10	Trunk Z	Gs	20.8	27.6	-13.4	22.8	60.0

Appendix B

VEHICLE AND DUMMY RESPONSE DATA

NOTE : Data trace scales are automatically scaled at the request of the COTR. Use caution when reviewing data.

TEST NO. CS5306

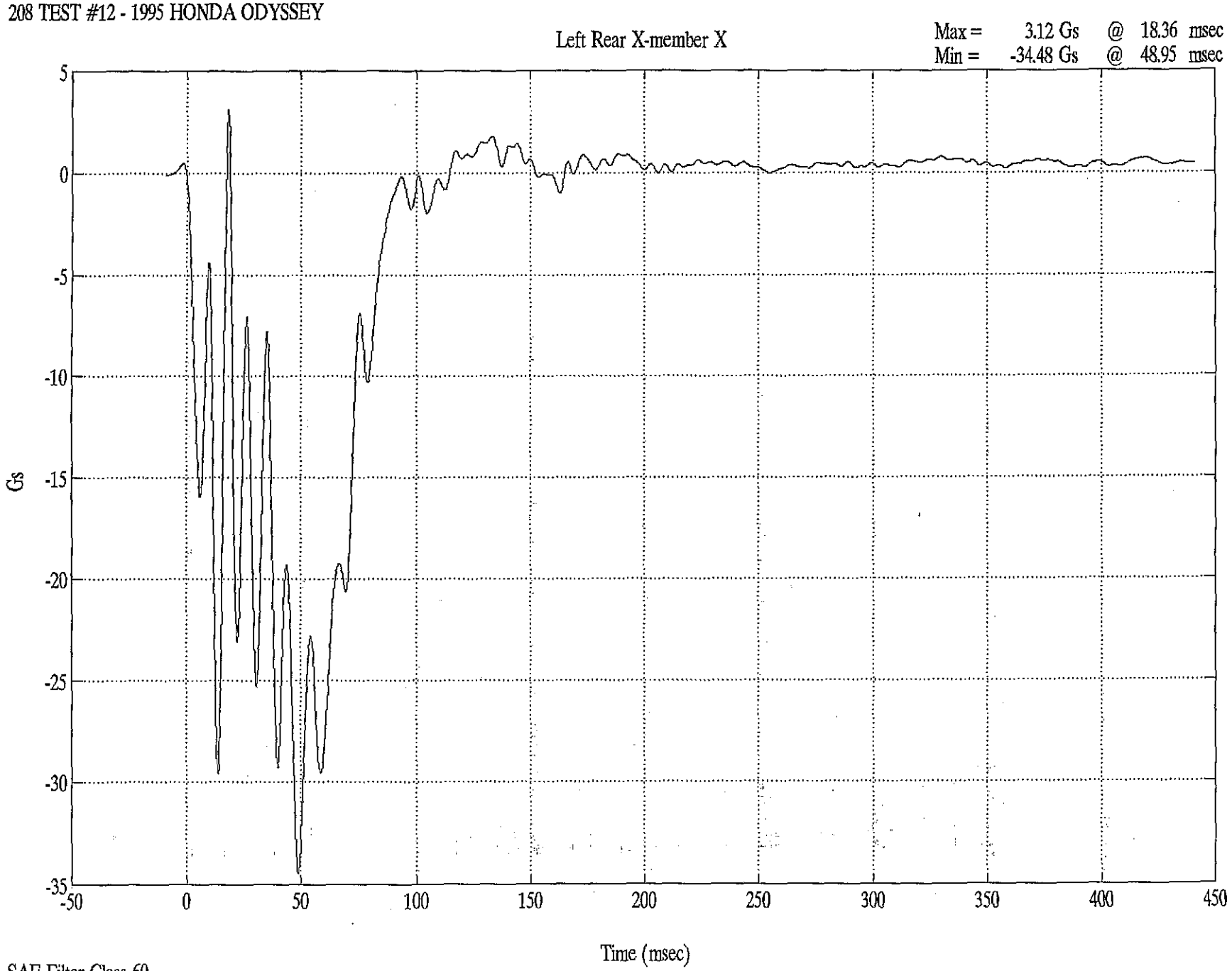
VEHICLE	SAE FILTER CHANNEL CLASS
	60

FACILITY: TRACK TEST DATE: 15 Feb 1995
RUN #: 1493 TEST TIME: 12:07:23
SERIES #: 16 BOARD: b

TITLE: 208 TEST #12 - 1995 HONDA ODYSSEY

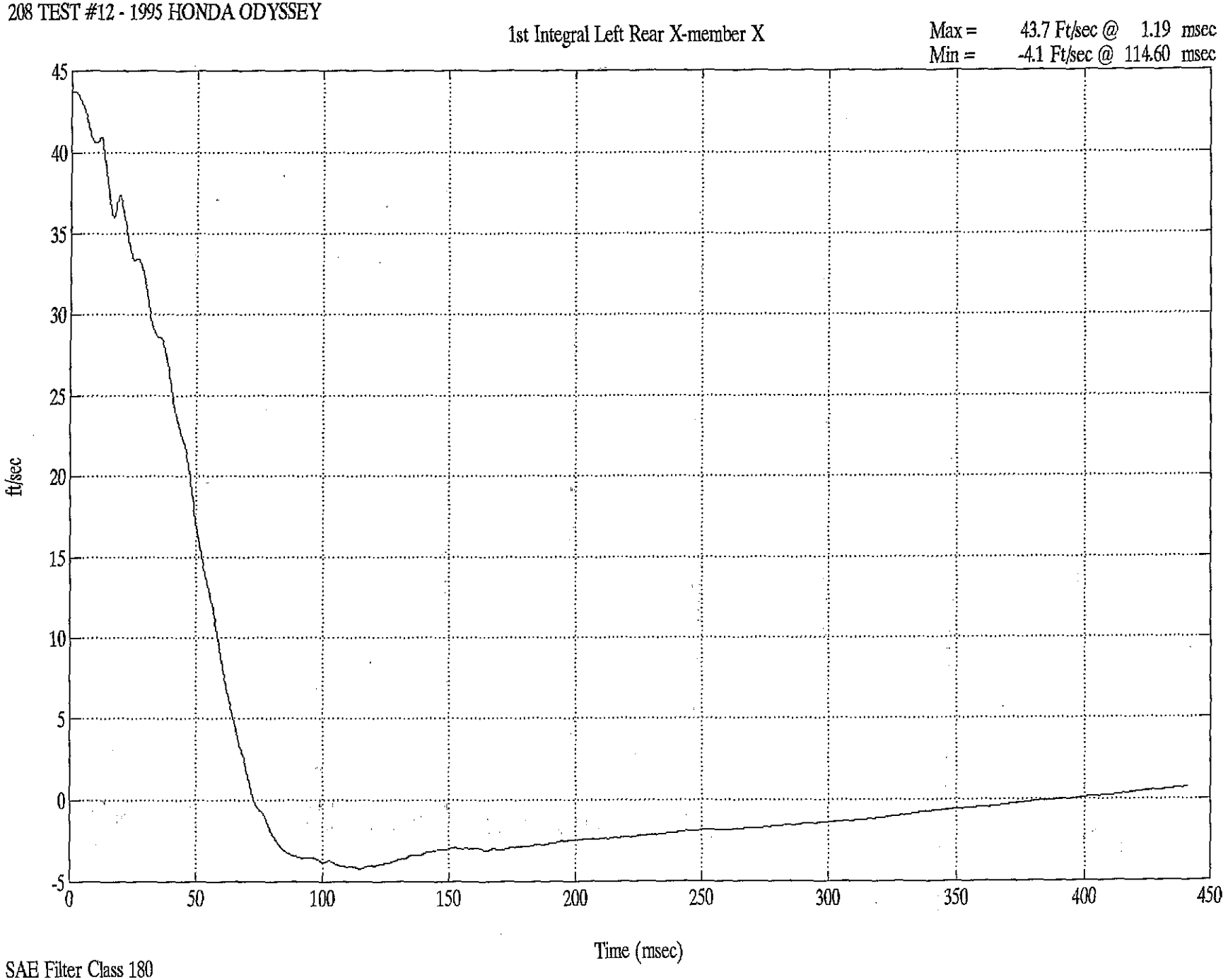
CHANNEL NUMBER	DESCRIPTION	ENGR UNIT	MAXIMUM AMP	MAXIMUM msec	MINIMUM AMP	MINIMUM msec	FILTER CLASS
1	Left Rear X-member X	Gs	3.1	18.4	-34.5	49.0	60.0
2	Right Rear X-member X	Gs	1.7	133.8	-28.5	43.6	60.0
3	Engine Top X	Gs	53.3	42.6	-120.3	31.7	60.0
4	Engine Bottom X	Gs	23.4	47.8	-148.4	28.0	60.0
5	Right Brake Caliper X	Gs	19.0	47.8	-89.9	29.5	60.0
6	Left Brake Caliper X	Gs	23.6	49.3	-76.6	42.5	60.0
7	Instrument Panel X	Gs	4.7	98.8	-43.0	50.3	60.0
8	Pos. 1 Chest Disp.	in	.0	7.4	-2.2	86.2	180.0
9	Pos. 2 Chest Disp.	in	.1	84.0	-.7	107.0	180.0
10	Trunk Z	Gs	20.8	27.6	-13.4	22.8	60.0

208 TEST #12 - 1995 HONDA ODYSSEY



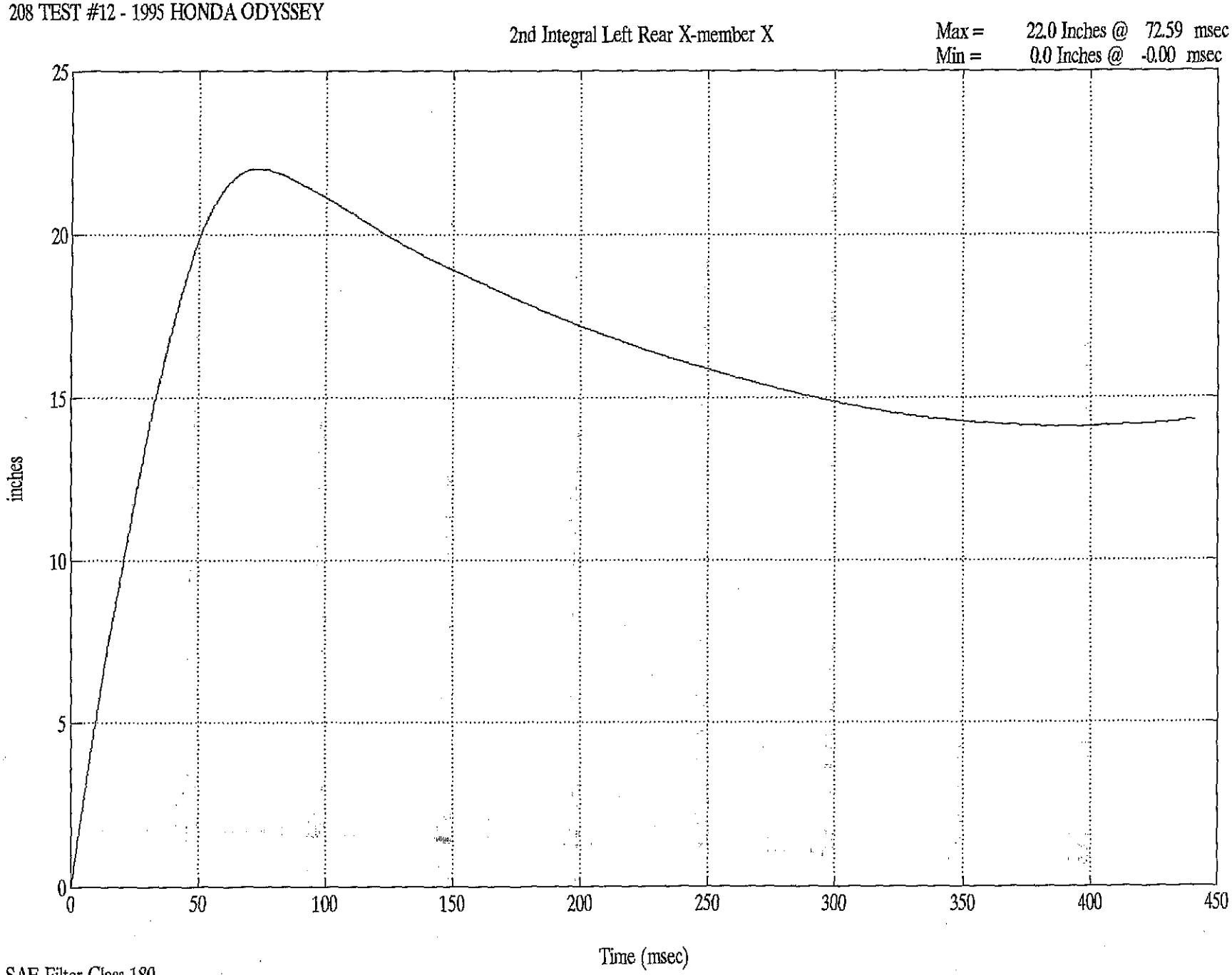
SAE Filter Class 60

208 TEST #12 - 1995 HONDA ODYSSEY



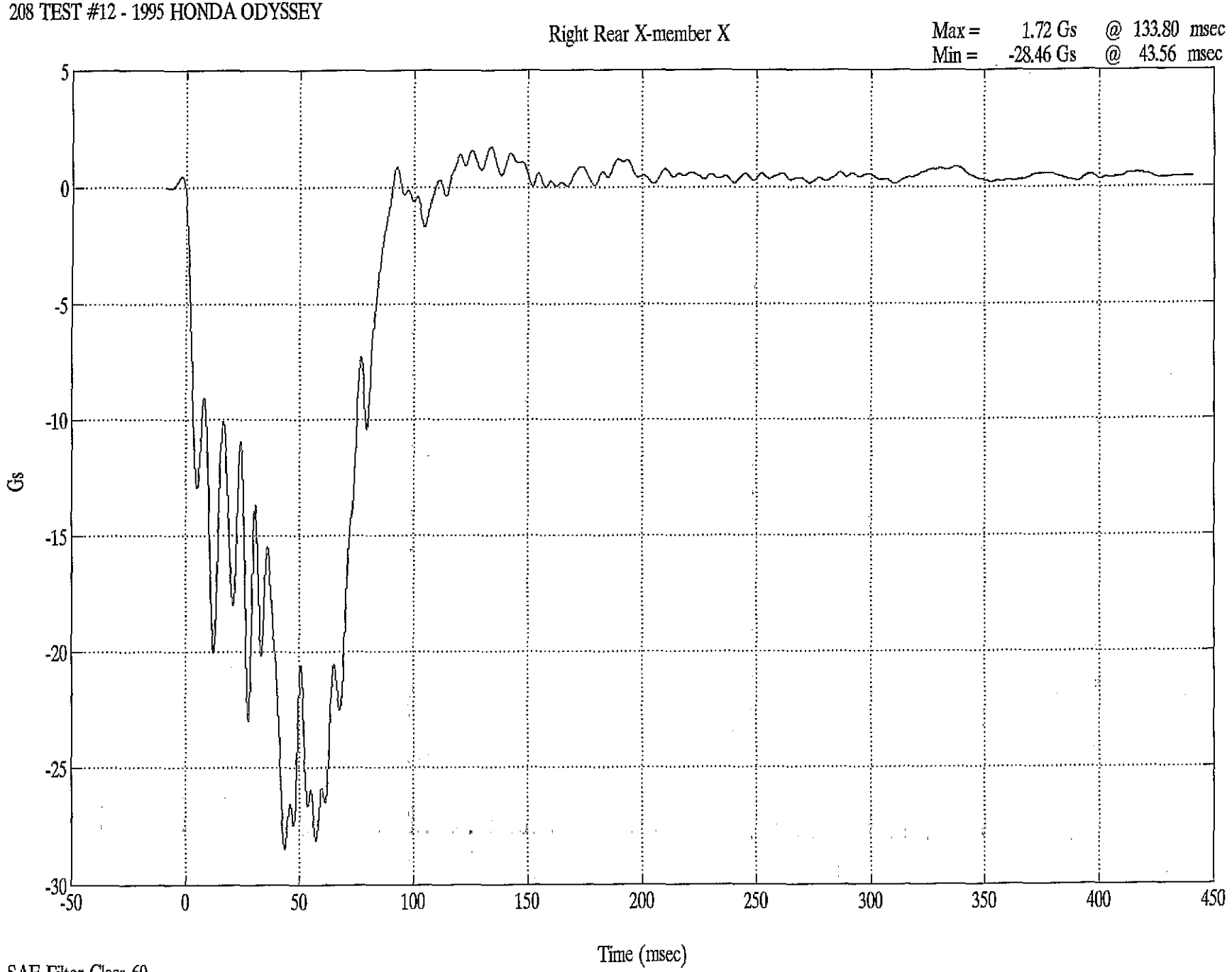
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



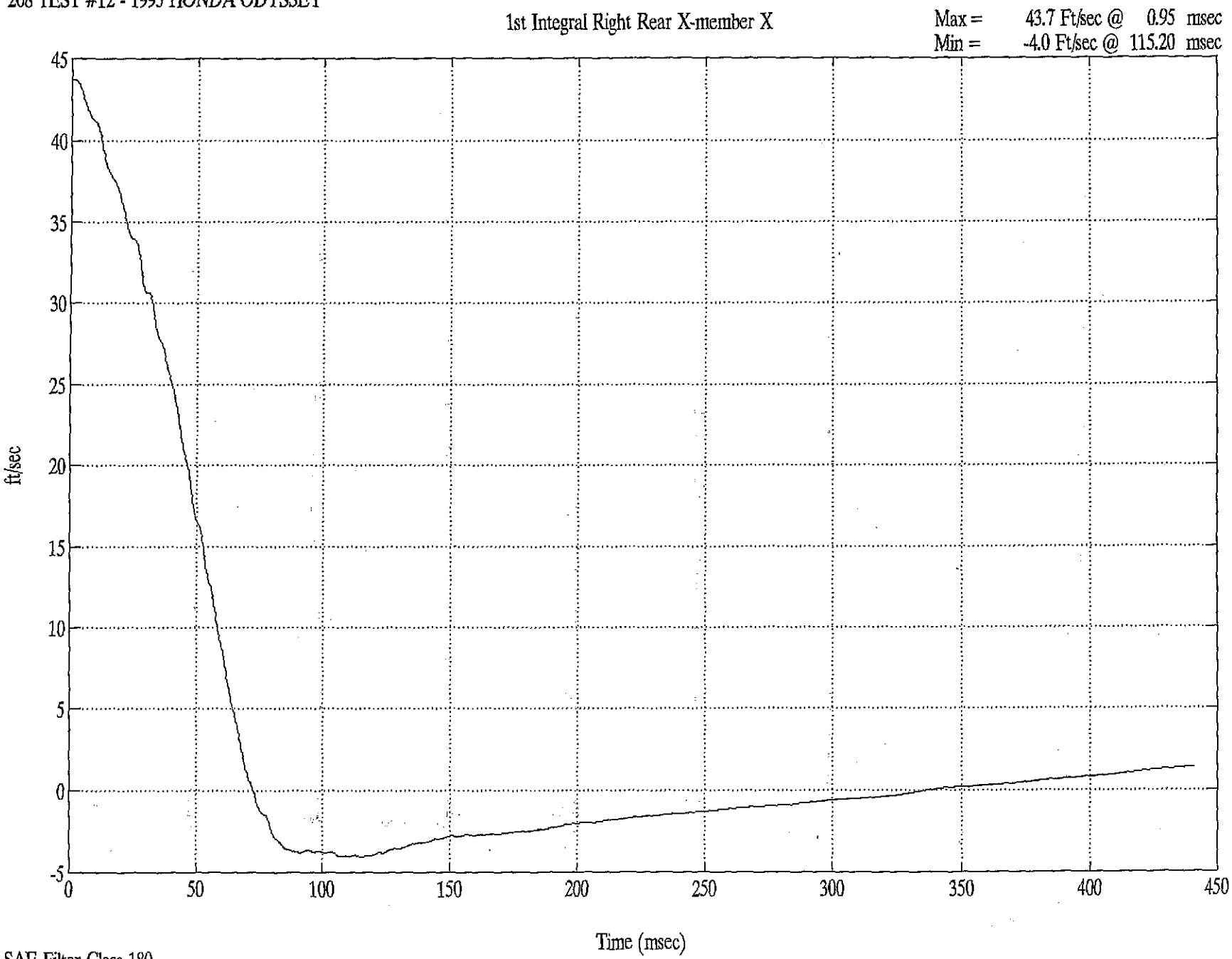
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



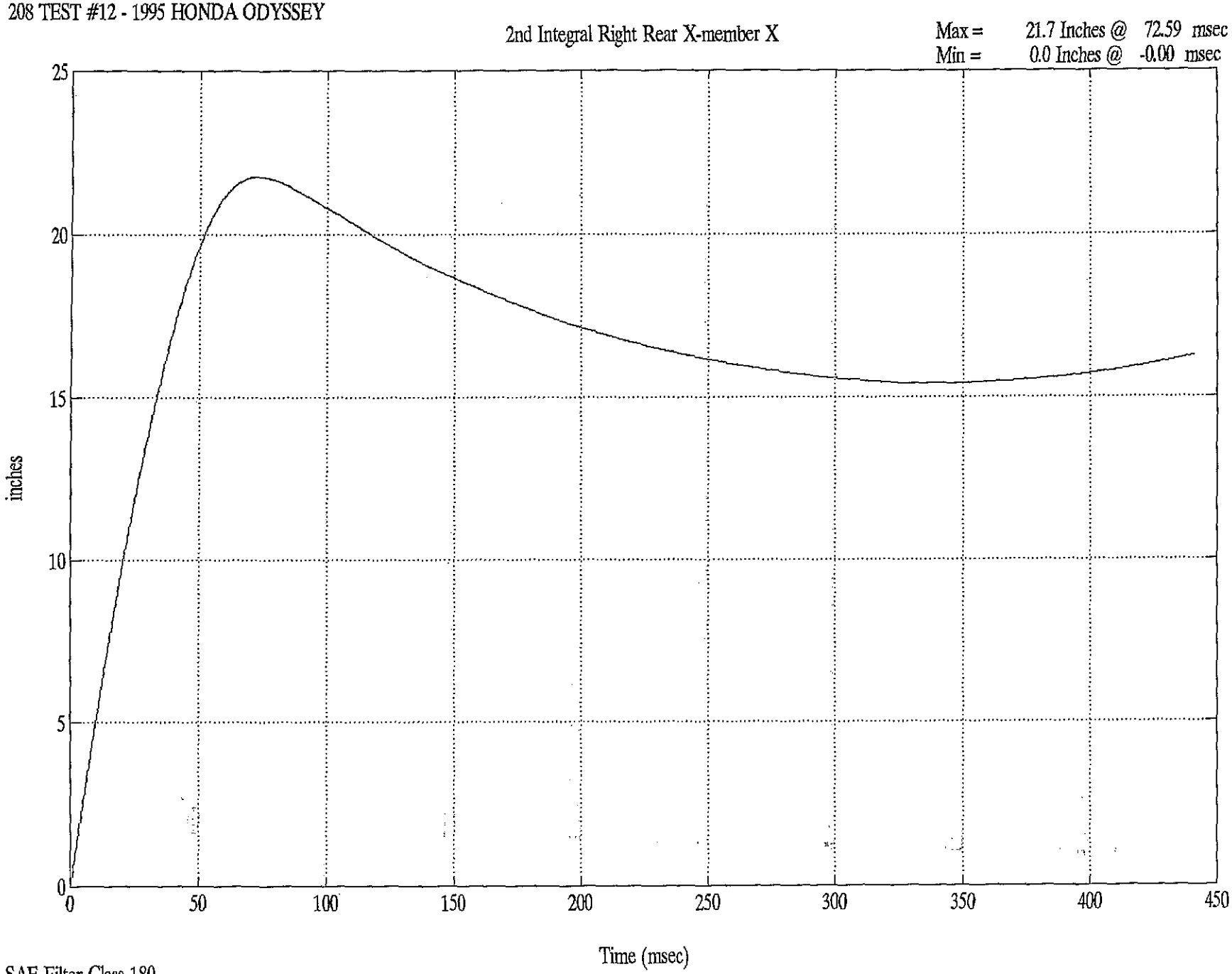
SAE Filter Class 60

208 TEST #12 - 1995 HONDA ODYSSEY



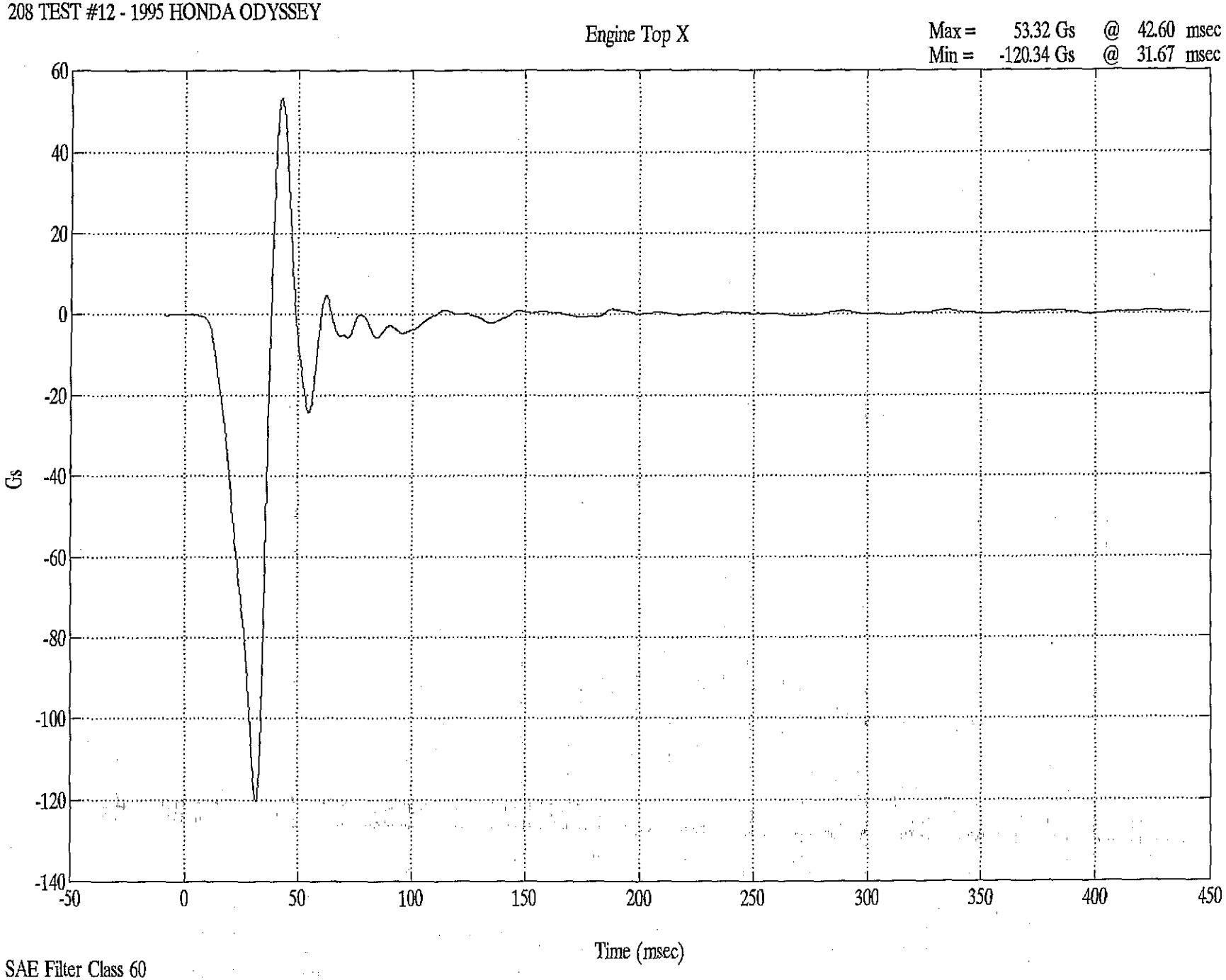
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



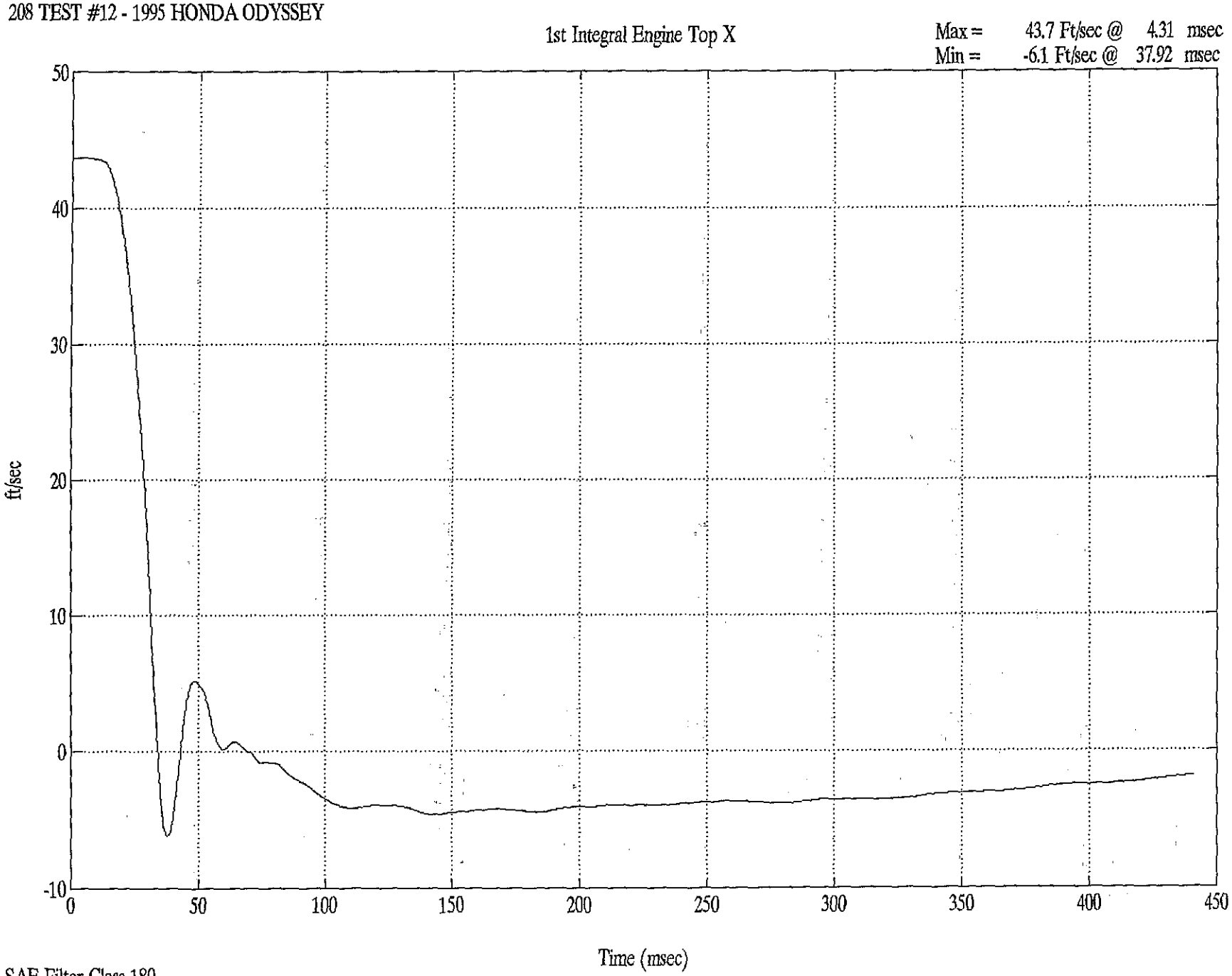
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



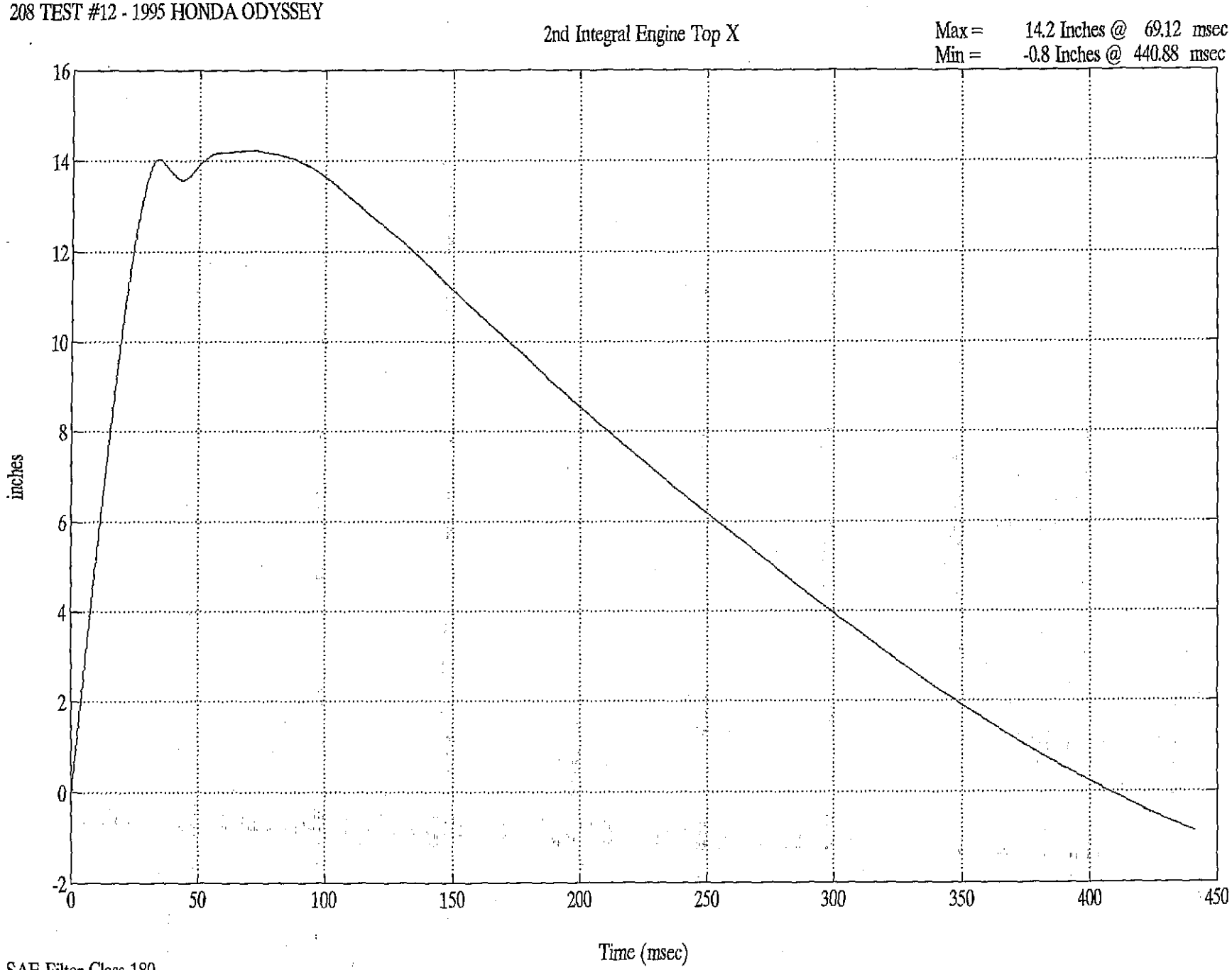
SAE Filter Class 60

208 TEST #12 - 1995 HONDA ODYSSEY



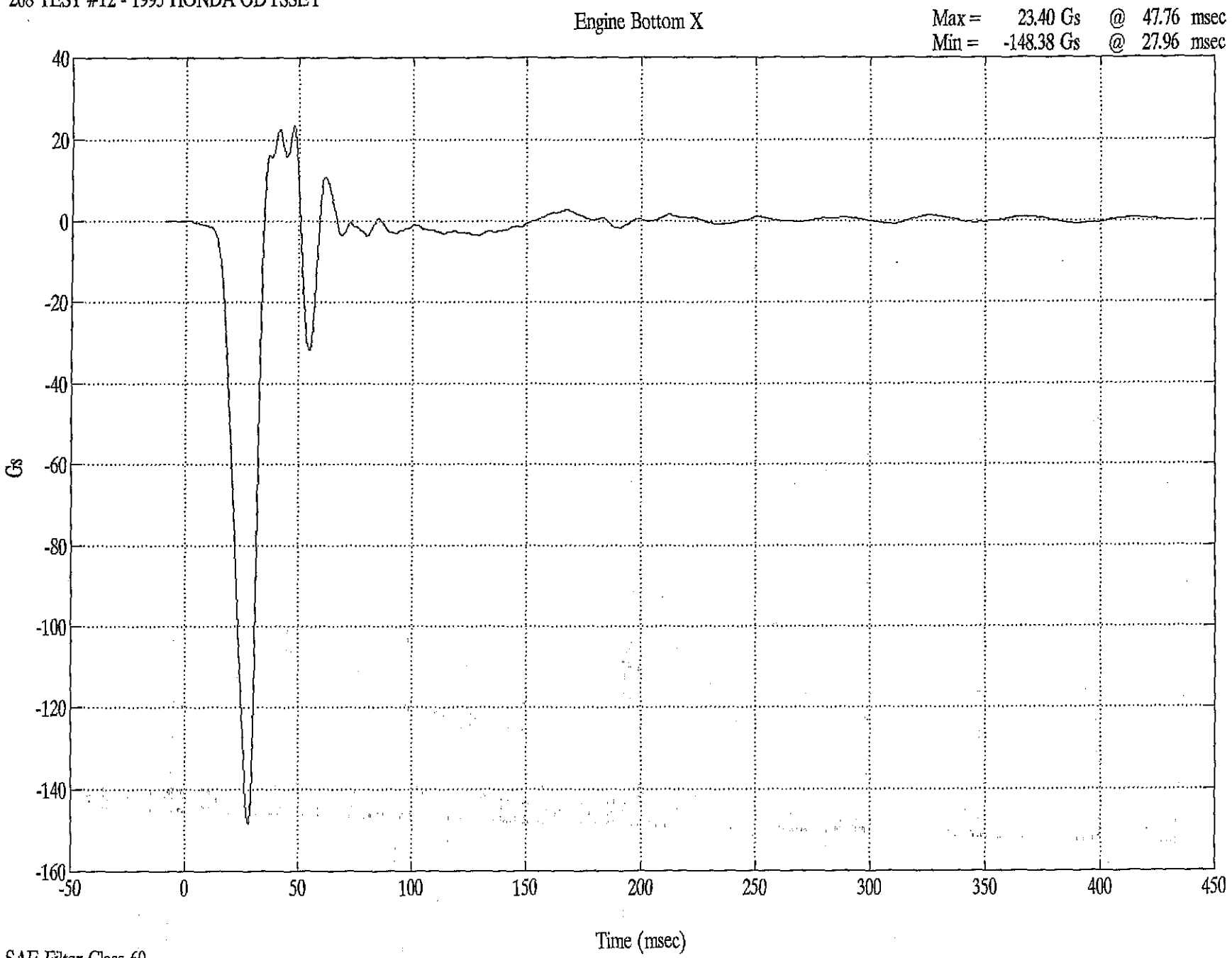
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



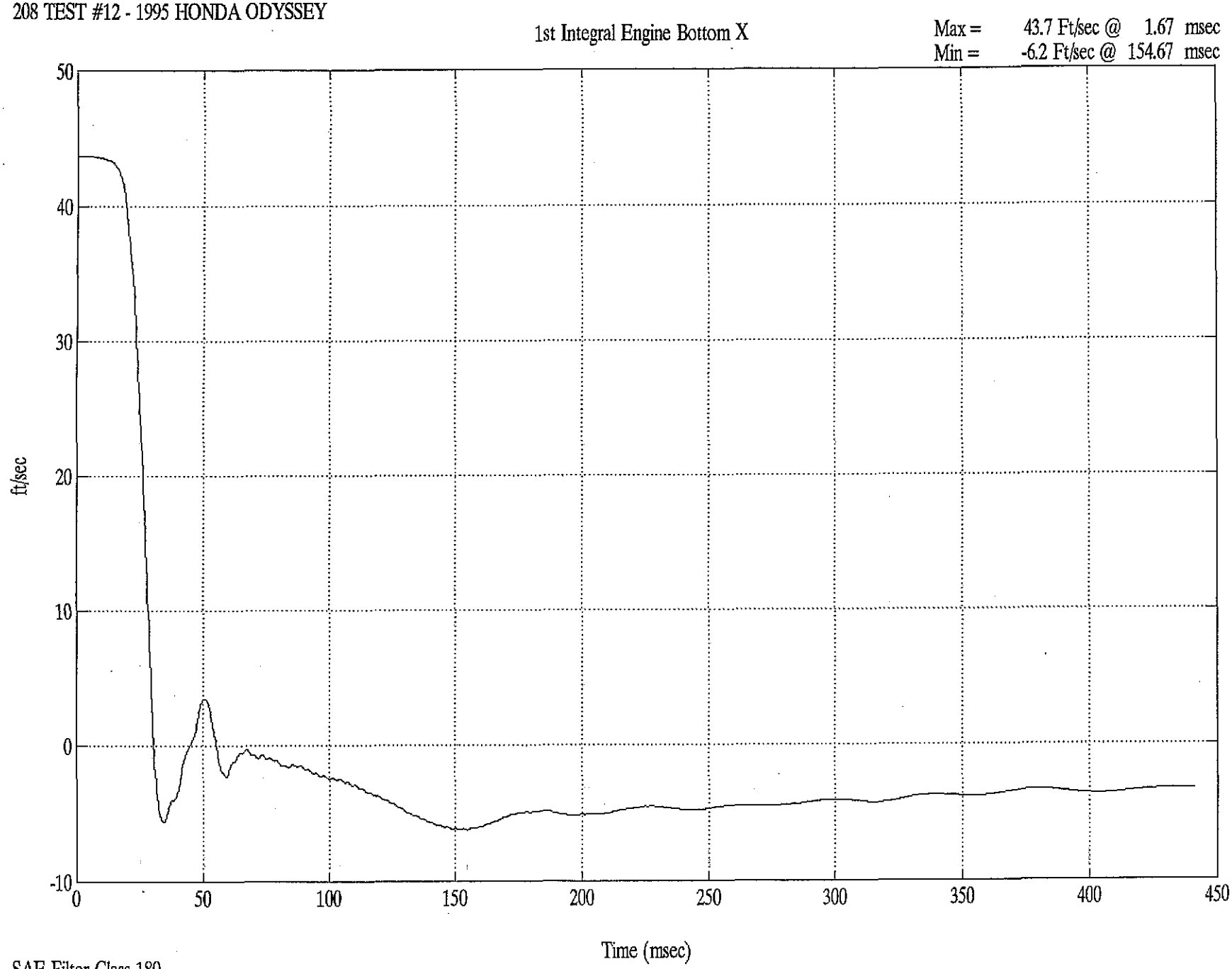
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



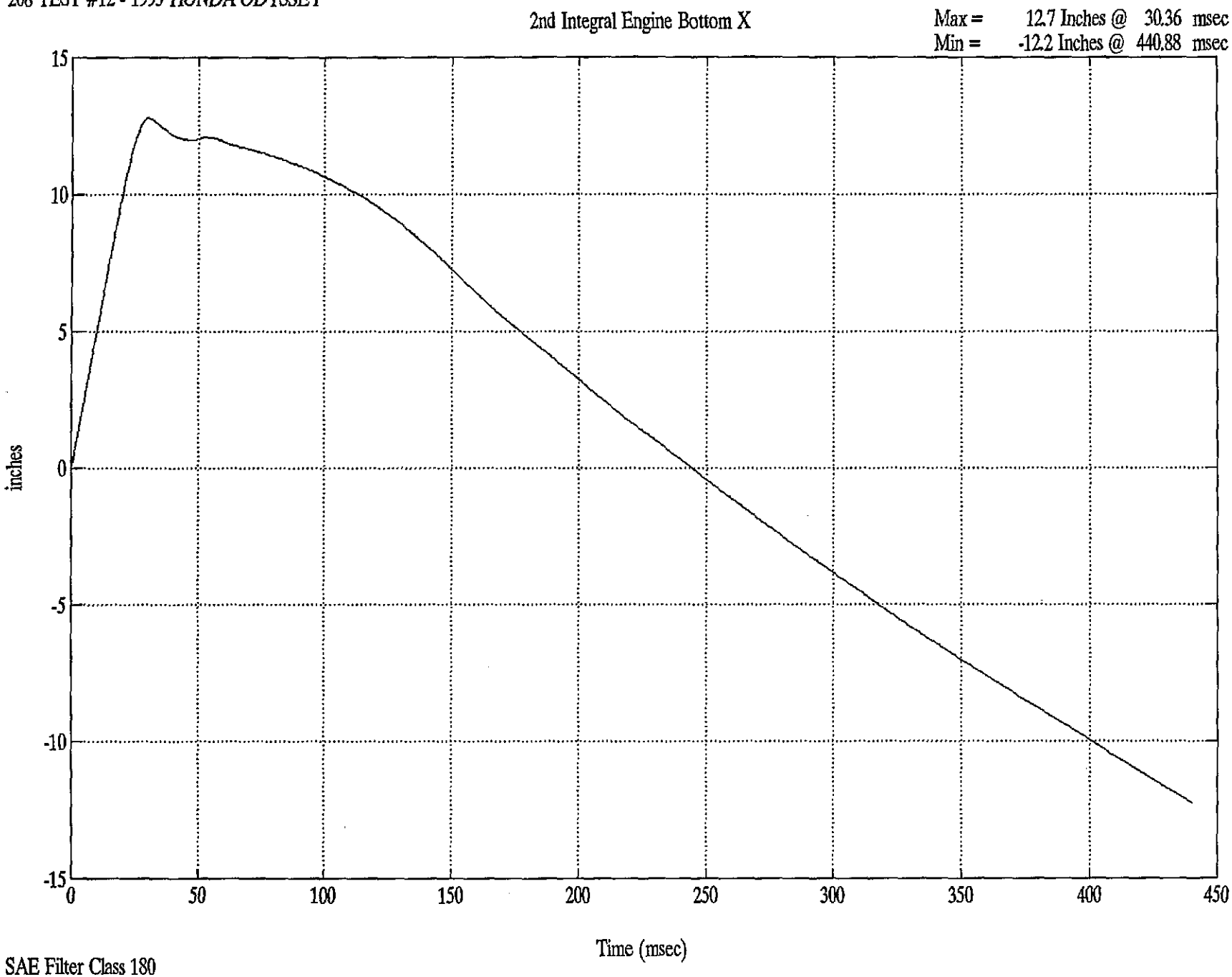
SAE Filter Class 60

208 TEST #12 - 1995 HONDA ODYSSEY



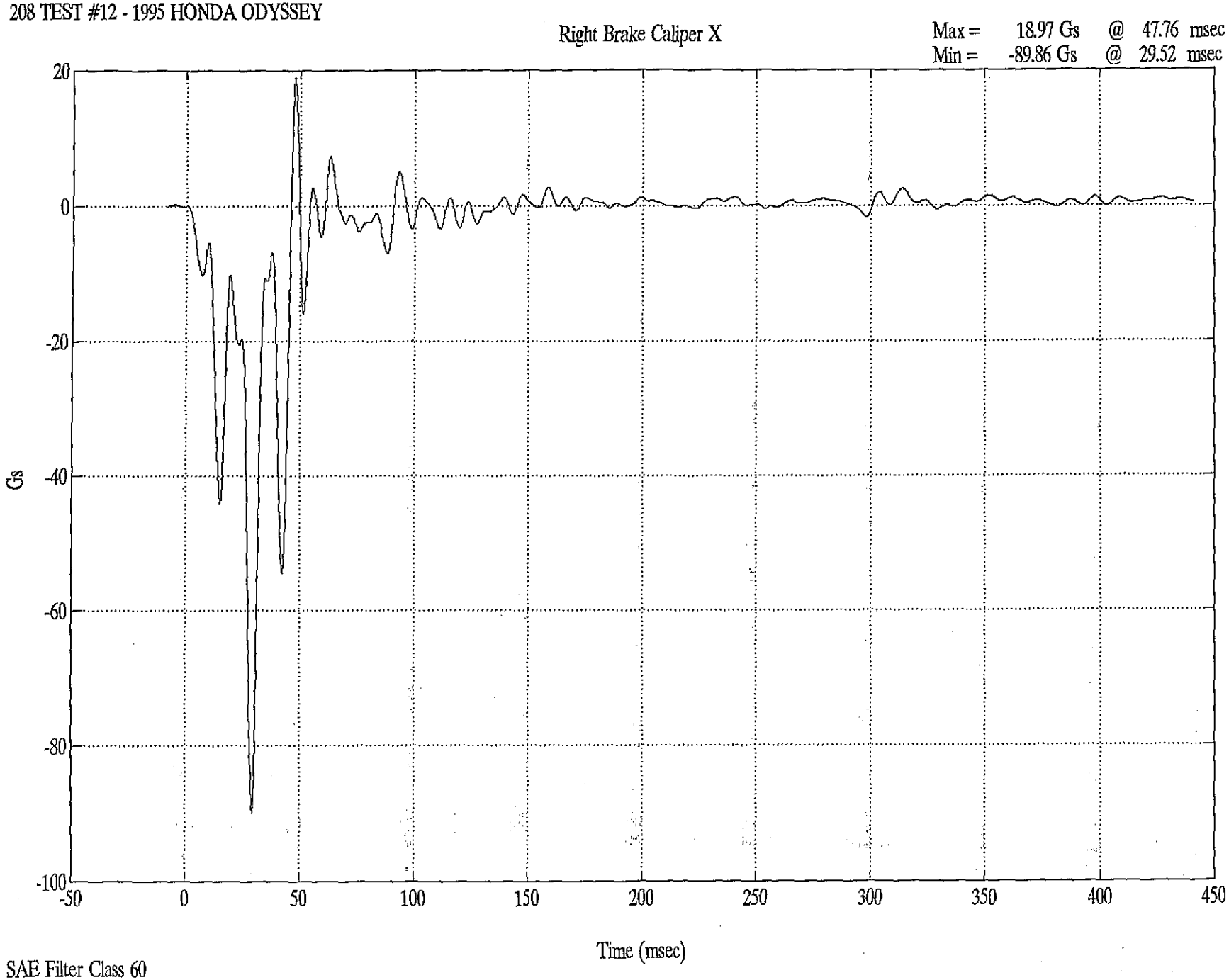
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



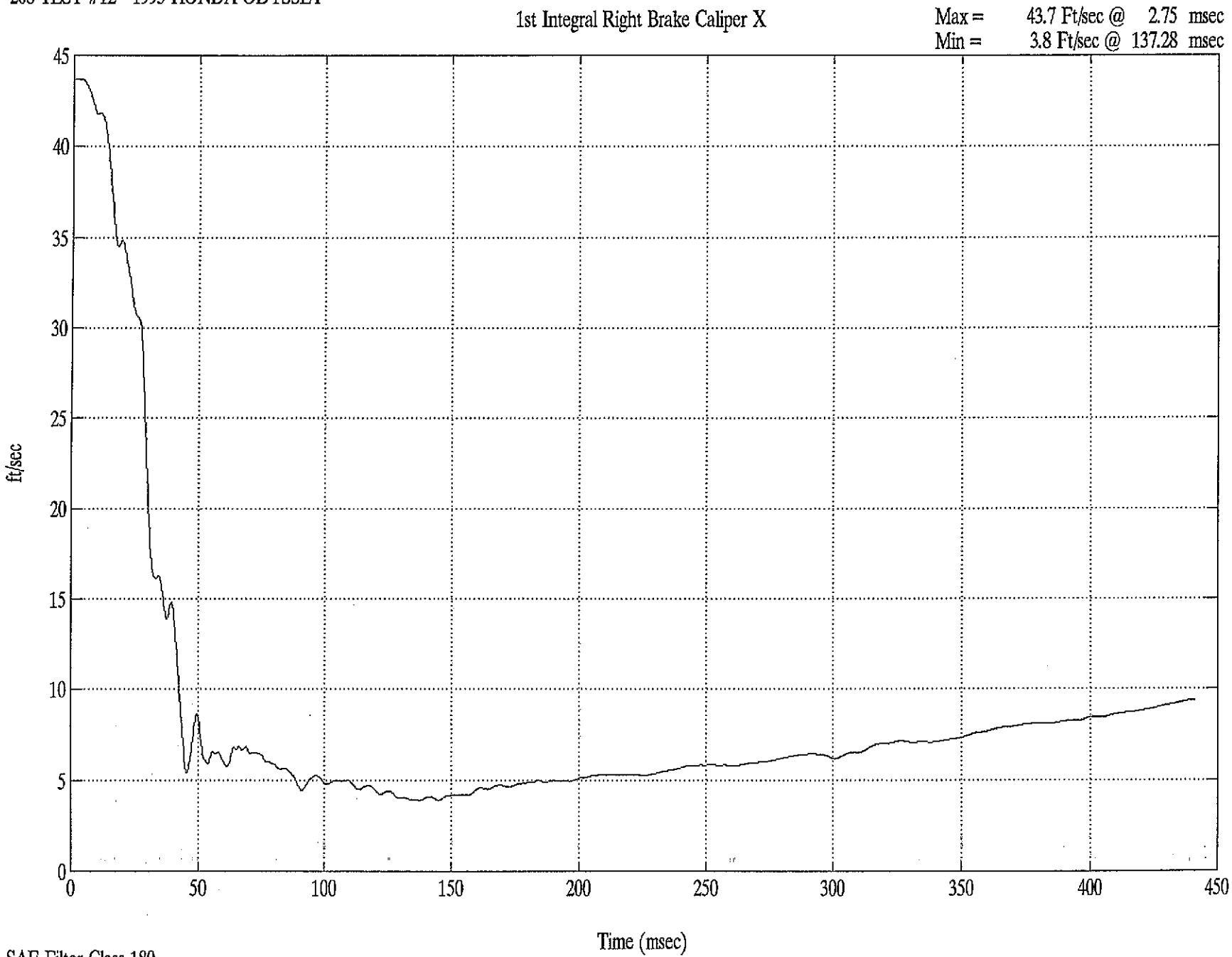
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



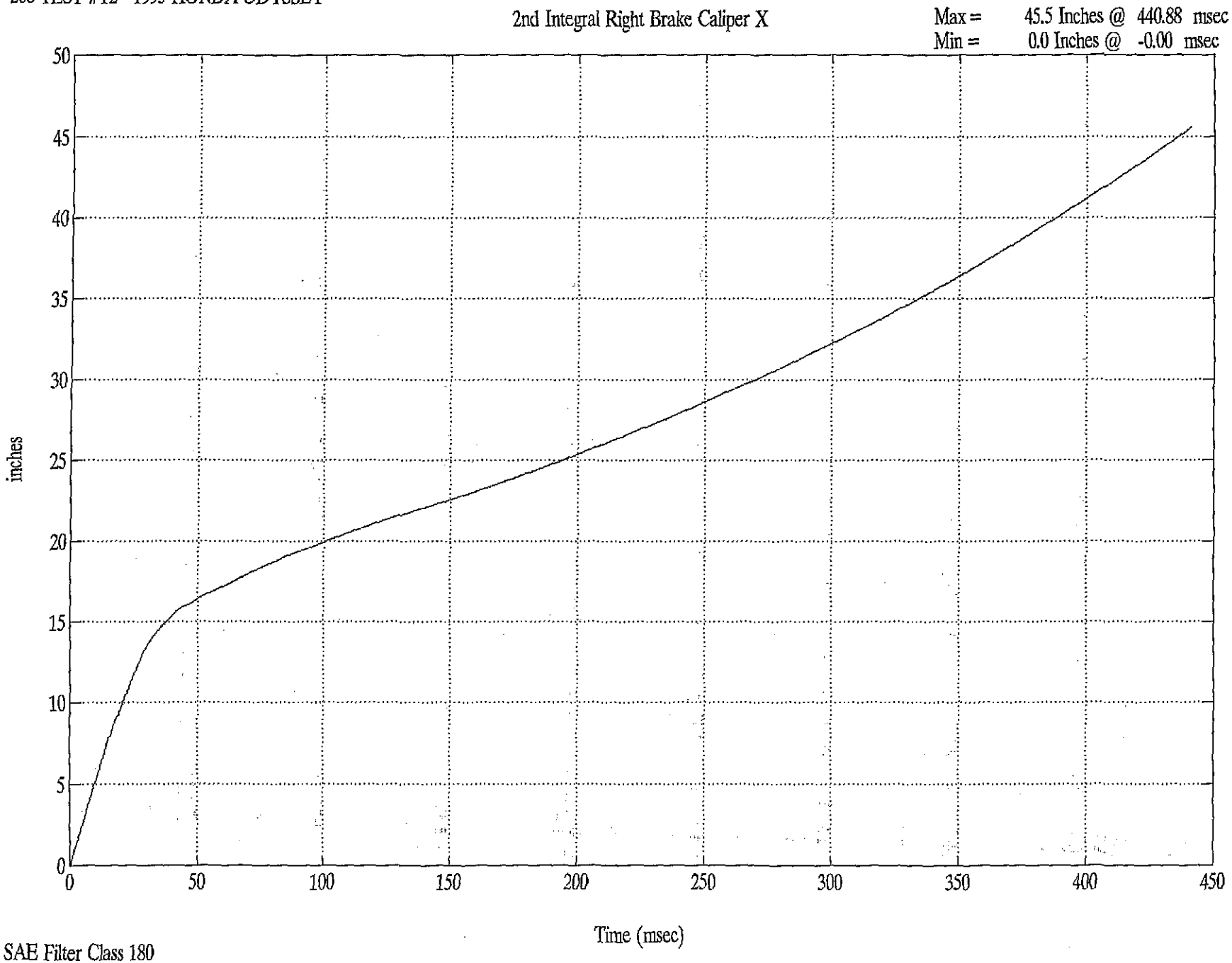
SAE Filter Class 60

208 TEST #12 - 1995 HONDA ODYSSEY



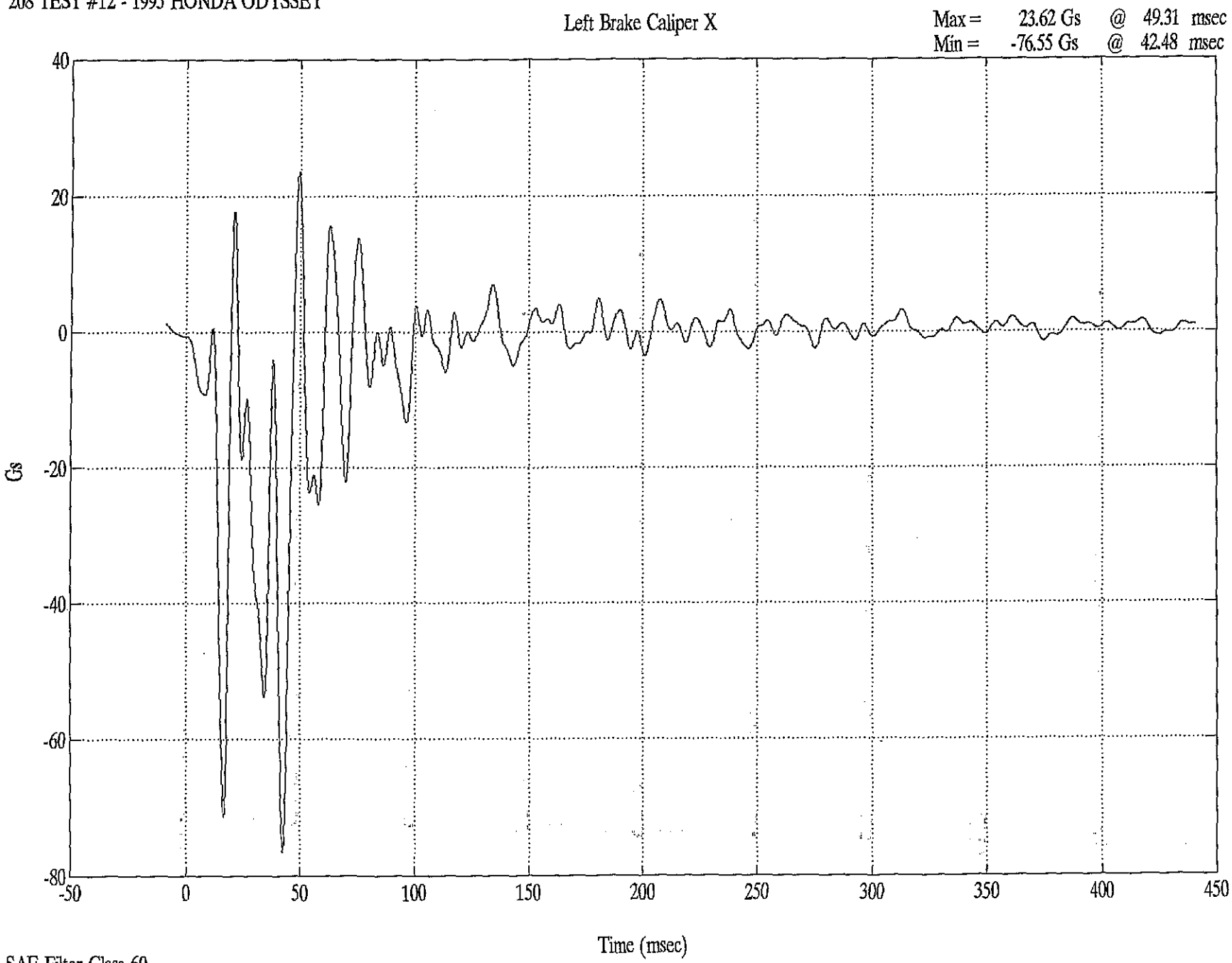
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



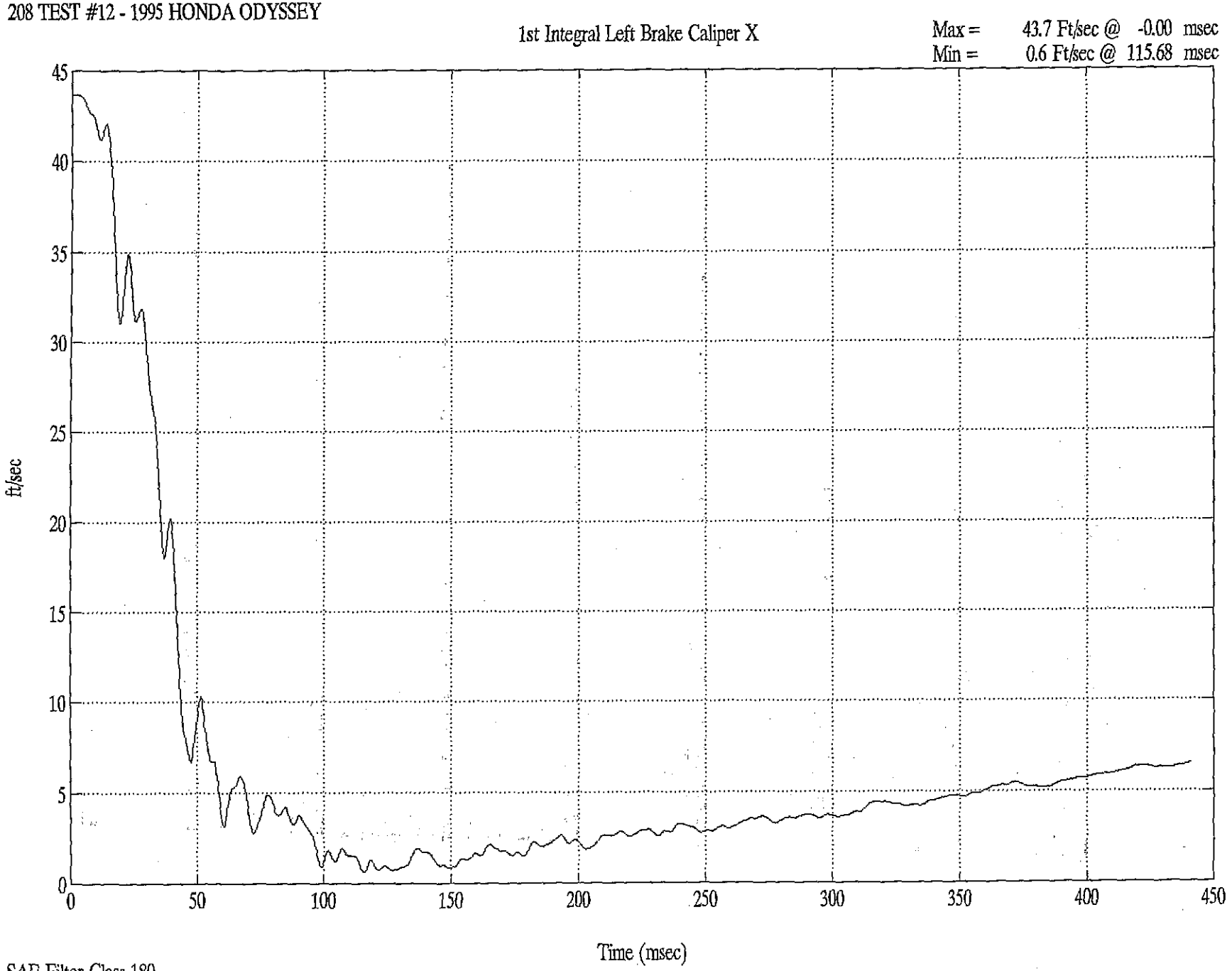
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



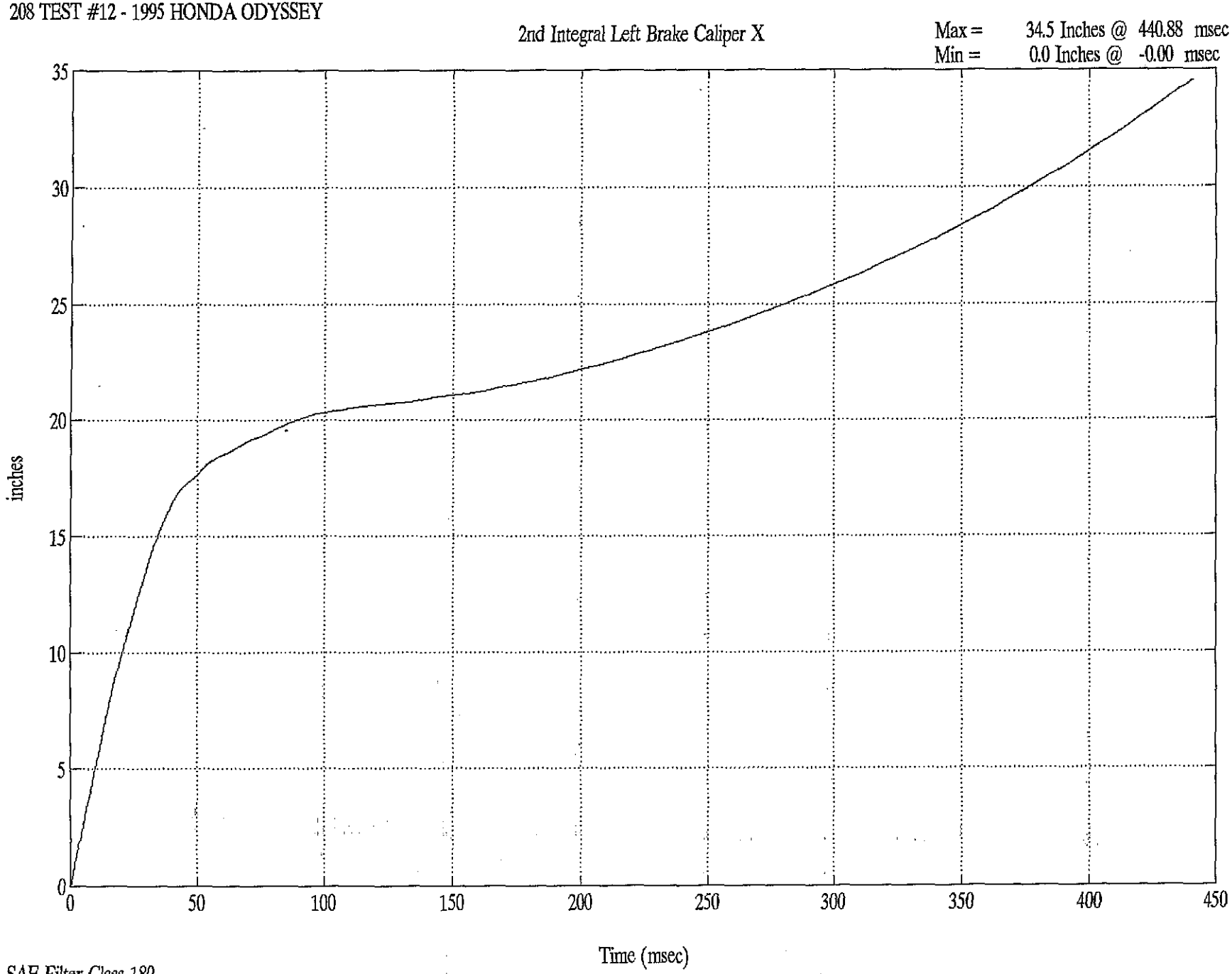
SAE Filter Class 60

208 TEST #12 - 1995 HONDA ODYSSEY



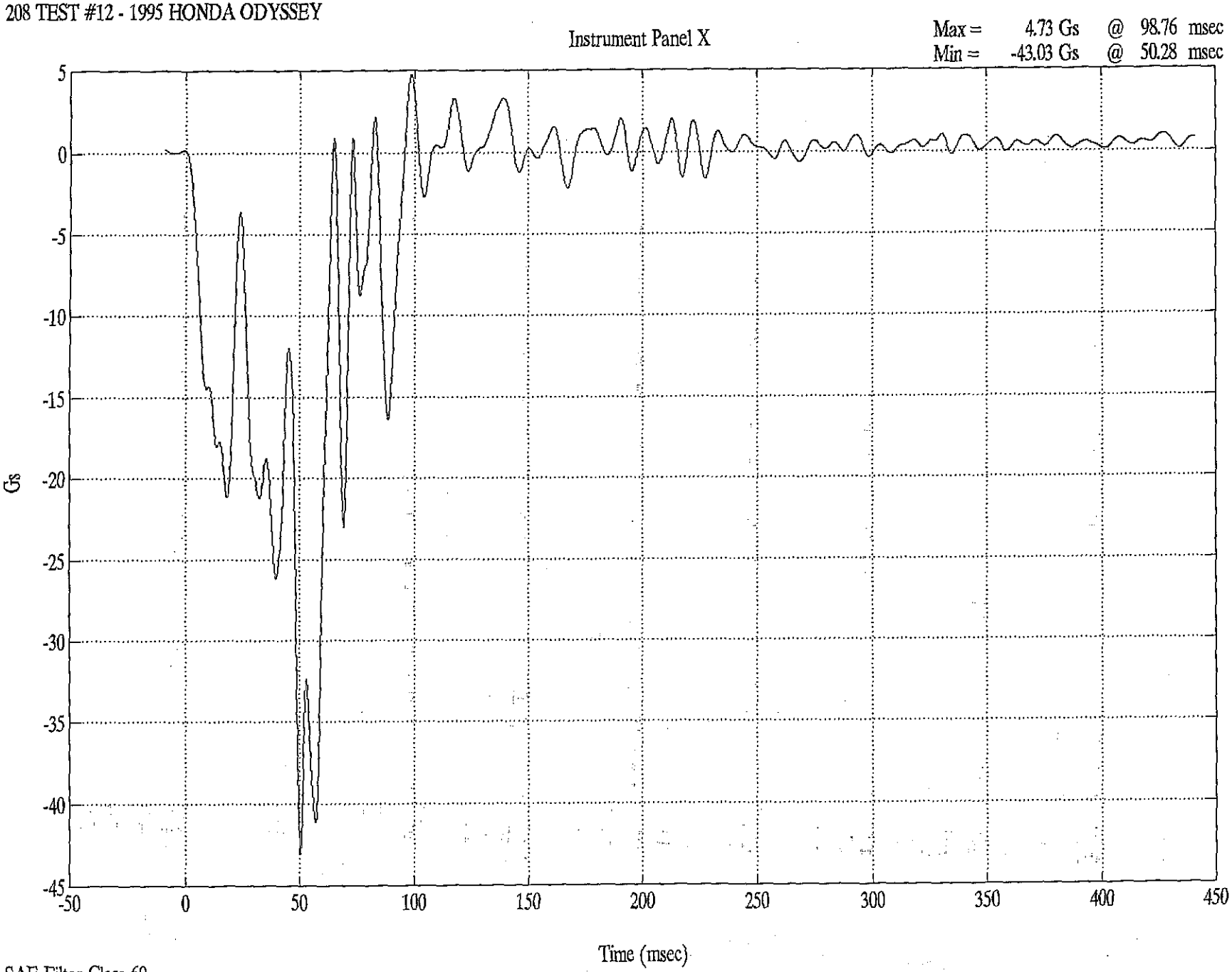
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



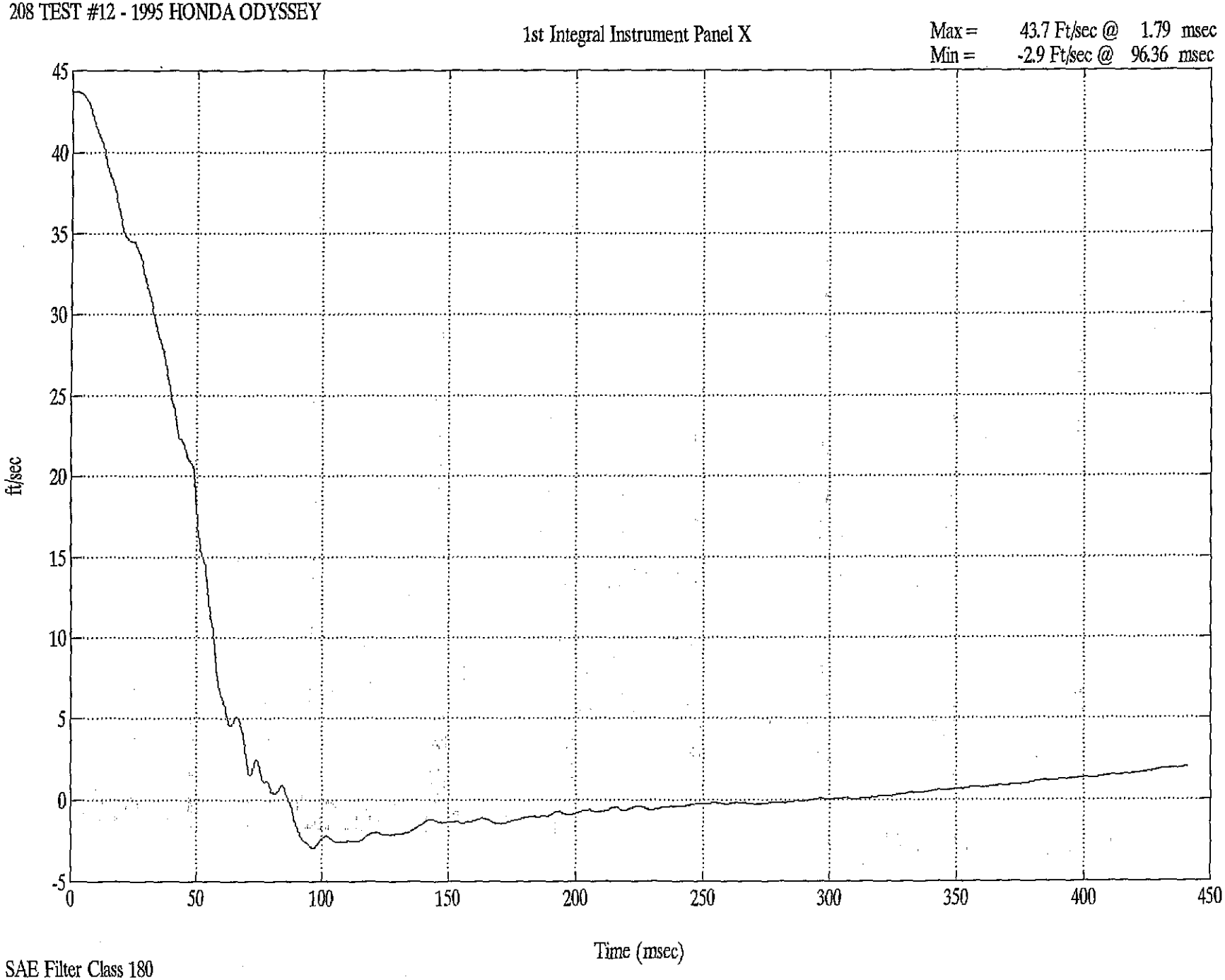
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



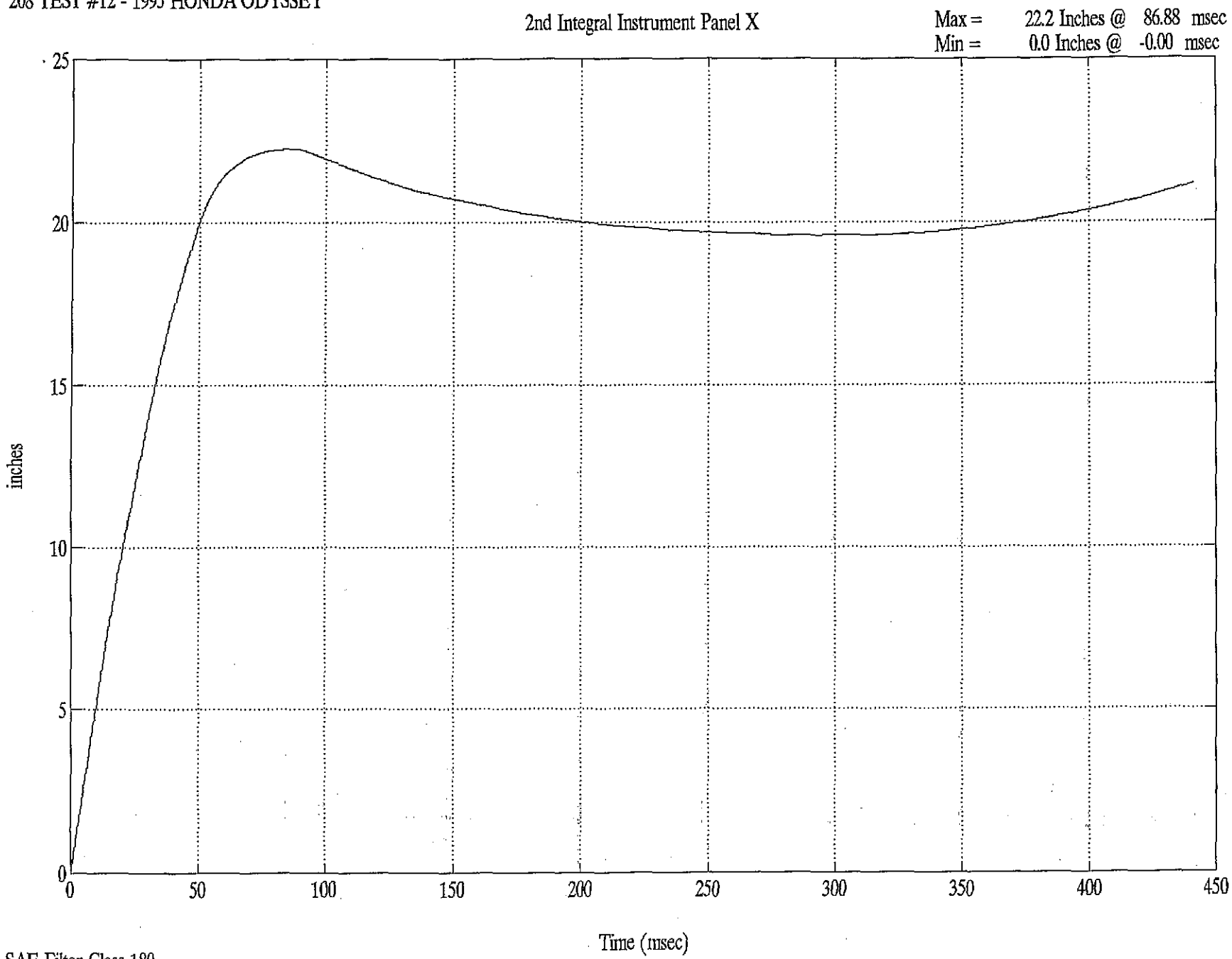
SAE Filter Class 60

208 TEST #12 - 1995 HONDA ODYSSEY



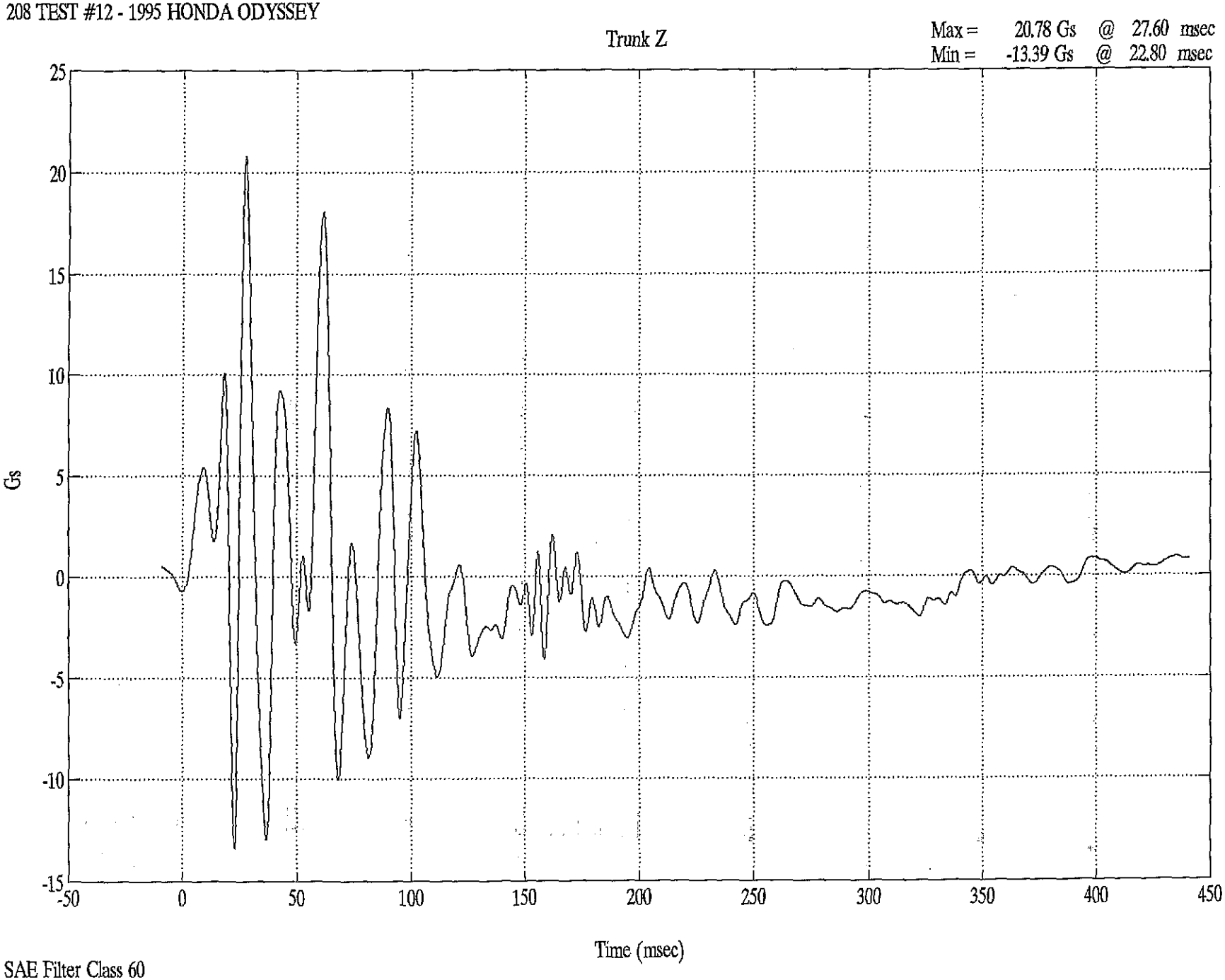
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



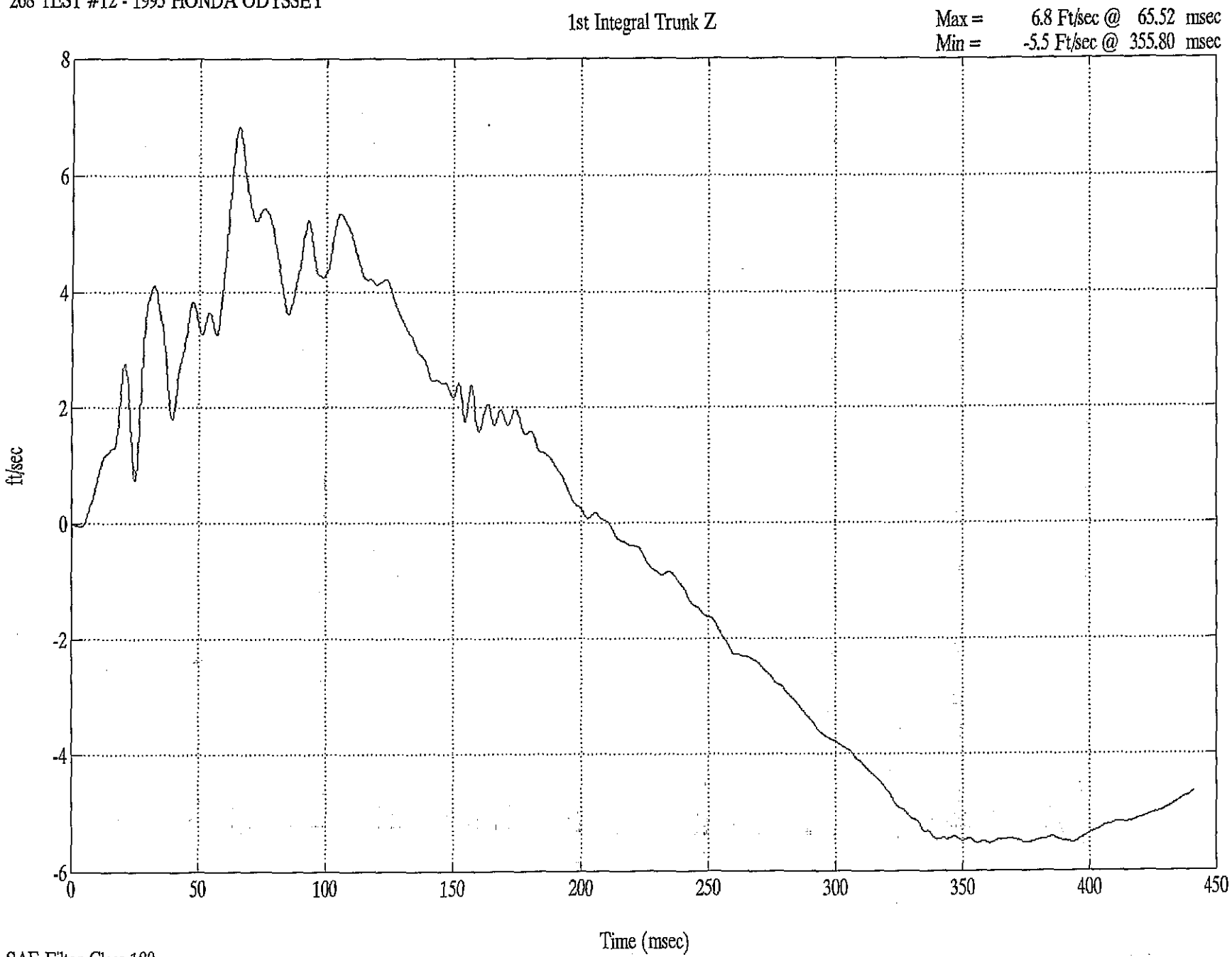
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



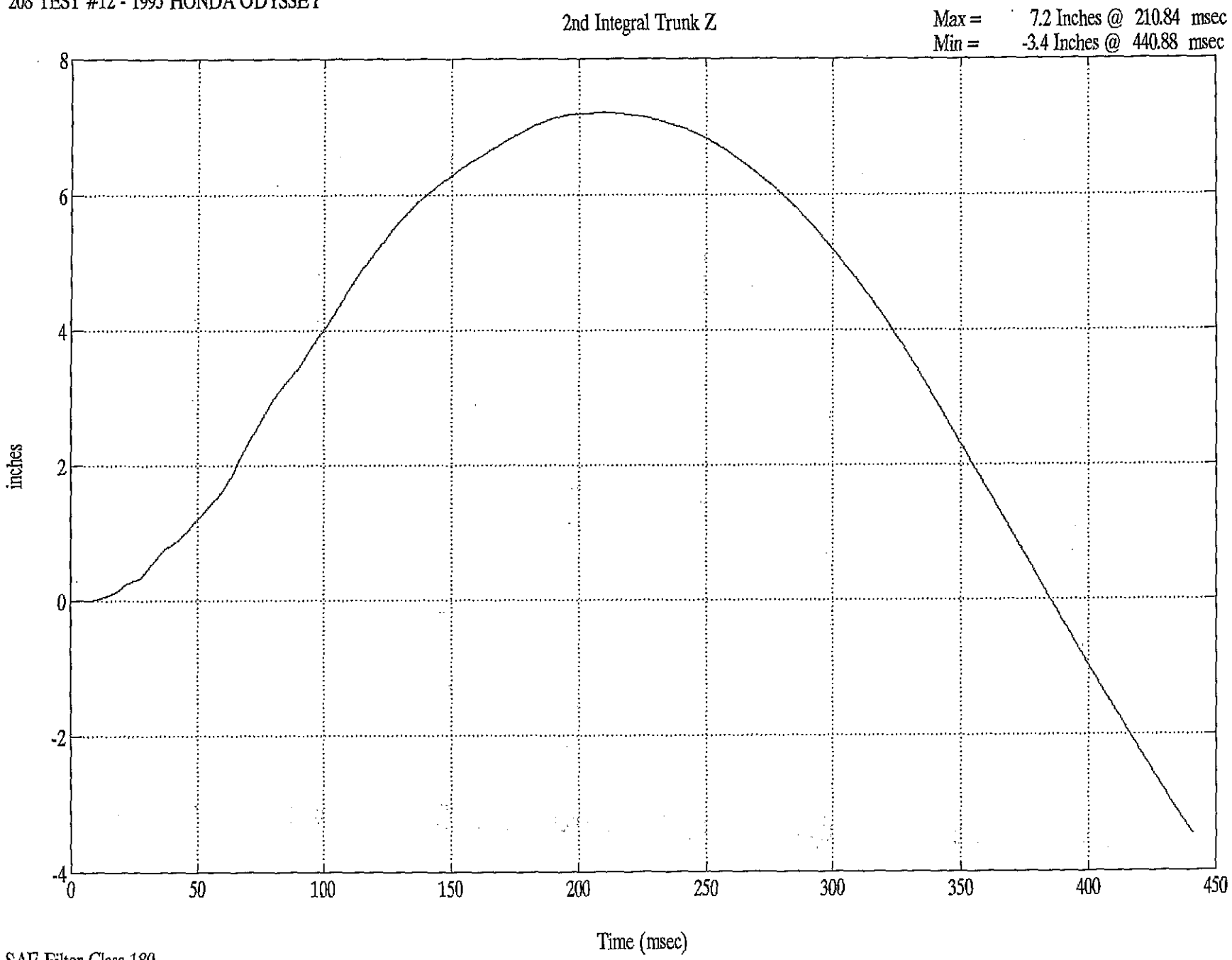
SAE Filter Class 60

208 TEST #12 - 1995 HONDA ODYSSEY



SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



SAE Filter Class 180

TEST NO. CS5306

DUMMY	SAE FILTER CHANNEL CLASS
Head Accelerations	1000
Chest Accelerations	180
Femur Forces	600

FACILITY: TRACK TEST DATE: 15 Feb 1995
RUN #: 1493 TEST TIME: 12:07:23
SERIES #: 16 BOARD: a

TITLE: 208 TEST #12 - 1995 HONDA ODYSSEY

CHANNEL NUMBER	DESCRIPTION	ENGR UNIT	MAXIMUM AMP	MAXIMUM msec	MINIMUM AMP	MINIMUM msec	FILTER CLASS
1	Pos. 1 Head X	Gs	24.3	198.5	-38.0	74.2	1000.0
2	Pos. 1 Head Y	Gs	5.3	54.4	-3.0	202.0	1000.0
3	Pos. 1 Head Z	Gs	20.4	78.8	-2.8	65.2	1000.0
4	Pos. 1 Left Femur	lbs	30.3	169.8	-1213.4	58.8	600.0
5	Pos. 1 Chest X	Gs	3.0	119.4	-58.8	77.3	180.0
6	Pos. 1 Chest Y	Gs	6.8	93.6	-4.1	54.5	180.0
7	Pos. 1 Chest Z	Gs	5.4	78.1	-6.8	59.6	180.0
8	Pos. 1 Right Femur	lbs	81.7	118.9	-1612.6	57.2	600.0
9	Pos. 2 Head X	Gs	54.2	117.6	-18.2	90.7	1000.0
10	Pos. 2 Head Y	Gs	6.7	40.7	-76.6	117.2	1000.0
11	Pos. 2 Head Z	Gs	47.9	117.6	-17.8	99.0	1000.0
12	Pos. 2 Left Femur	lbs	65.9	169.4	-1592.9	65.6	600.0
13	Pos. 2 Chest X	Gs	2.3	404.9	-44.0	82.0	180.0
14	Pos. 2 Chest Y	Gs	1.5	65.2	-10.0	80.2	180.0
15	Pos. 2 Chest Z	Gs	22.8	74.8	-11.0	118.2	180.0
16	Pos. 2 Right Femur	lbs	42.5	182.9	-1797.0	81.5	600.0
17	Pos. 1 Head Resultant	Gs	41.1	77.0	.1	-.1	1000.0
18	Pos. 1 Chest Resultant	Gs	59.1	77.3	.0	5.6	180.0
19	Pos. 2 Head Resultant	Gs	95.3	118.0	.0	6.8	1000.0
20	Pos. 2 Chest Resultant	Gs	44.8	81.8	.0	-3.1	180.0

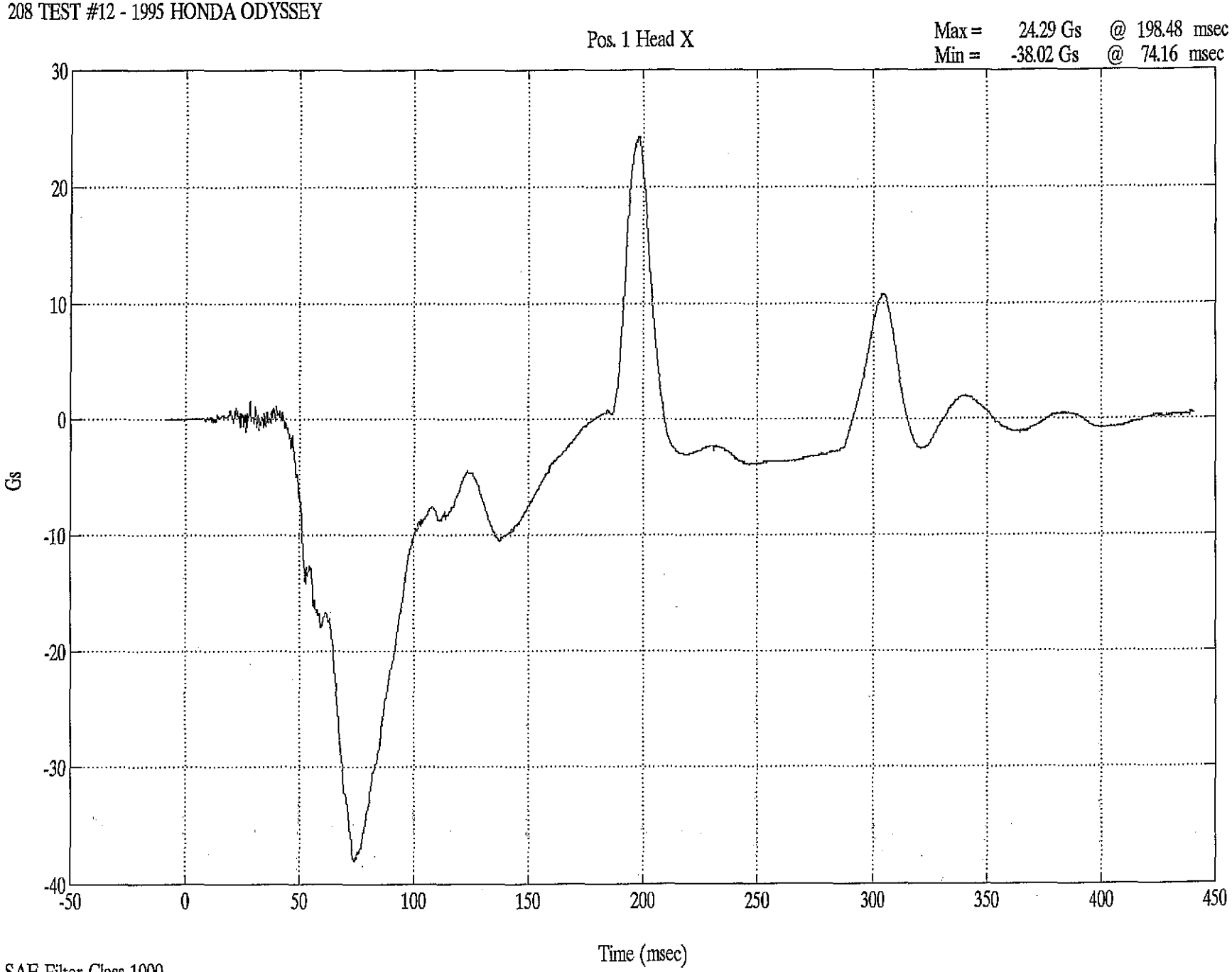
36 ms Fixed Duration HIC SUMMARY: Pos. 1 Head Resultant
hic: 158.56
t1 = 63.480 msec
t2 = 94.800 msec
Average G's Over Hic Duration = 30.32

CLIP SUMMARY: Pos. 1 Chest Resultant
Peak Resultant (3 ms CLIPPED DURATION) = 55.382 G's
Tstart = 76.0800 ms
Tend = 79.2000 ms
CSI = 372.274

36 ms Fixed Duration HIC SUMMARY: Pos. 2 Head Resultant
hic: 307.17
t1 = 115.920 msec
t2 = 125.280 msec
Average G's Over Hic Duration = 64.04

CLIP SUMMARY: Pos. 2 Chest Resultant
Peak Resultant (3 ms CLIPPED DURATION) = 43.087 G's
Tstart = 79.9200 ms
Tend = 83.0400 ms
CSI = 360.073

208 TEST #12 - 1995 HONDA ODYSSEY



SAE Filter Class 1000

FACILITY: TRACK TEST DATE: 15 Feb 1995
RUN #: 1493 TEST TIME: 12:07:23
SERIES #: 16 BOARD: a

TITLE: 208 TEST #12 - 1995 HONDA ODYSSEY

CHANNEL NUMBER	DESCRIPTION	ENGR UNIT	MAXIMUM AMP	MAXIMUM msec	MINIMUM AMP	MINIMUM msec	FILTER CLASS
1	Pos. 1 Head X	Gs	24.3	198.5	-38.0	74.2	1000.0
2	Pos. 1 Head Y	Gs	5.3	54.4	-3.0	202.0	1000.0
3	Pos. 1 Head Z	Gs	20.4	78.8	-2.8	65.2	1000.0
4	Pos. 1 Left Femur	lbs	30.3	169.8	-1213.4	58.8	600.0
5	Pos. 1 Chest X	Gs	3.0	119.4	-58.8	77.3	180.0
6	Pos. 1 Chest Y	Gs	6.8	93.6	-4.1	54.5	180.0
7	Pos. 1 Chest Z	Gs	5.4	78.1	-6.8	59.6	180.0
8	Pos. 1 Right Femur	lbs	81,7	118.9	-1612.6	57.2	600.0
9	Pos. 2 Head X	Gs	54.2	117.6	-18.2	90.7	1000.0
10	Pos. 2 Head Y	Gs	6.7	40.7	-76.6	117.2	1000.0
11	Pos. 2 Head Z	Gs	47.9	117.6	-17.8	99.0	1000.0
12	Pos. 2 Left Femur	lbs	65.9	169.4	-1592.9	65.6	600.0
13	Pos. 2 Chest X	Gs	2.3	404.9	-44.0	82.0	180.0
14	Pos. 2 Chest Y	Gs	1.5	65.2	-10.0	80.2	180.0
15	Pos. 2 Chest Z	Gs	22.8	74.8	-11.0	118.2	180.0
16	Pos. 2 Right Femur	lbs	42.5	182.9	-1797.0	81.5	600.0
17	Pos. 1 Head Resultant	Gs	41.1	77.0	.1	-.1	1000.0
18	Pos. 1 Chest Resultant	Gs	59.1	77.3	.0	5.6	180.0
19	Pos. 2 Head Resultant	Gs	95.3	118.0	.0	6.8	1000.0
20	Pos. 2 Chest Resultant	Gs	44.8	81.8	.0	-3.1	180.0

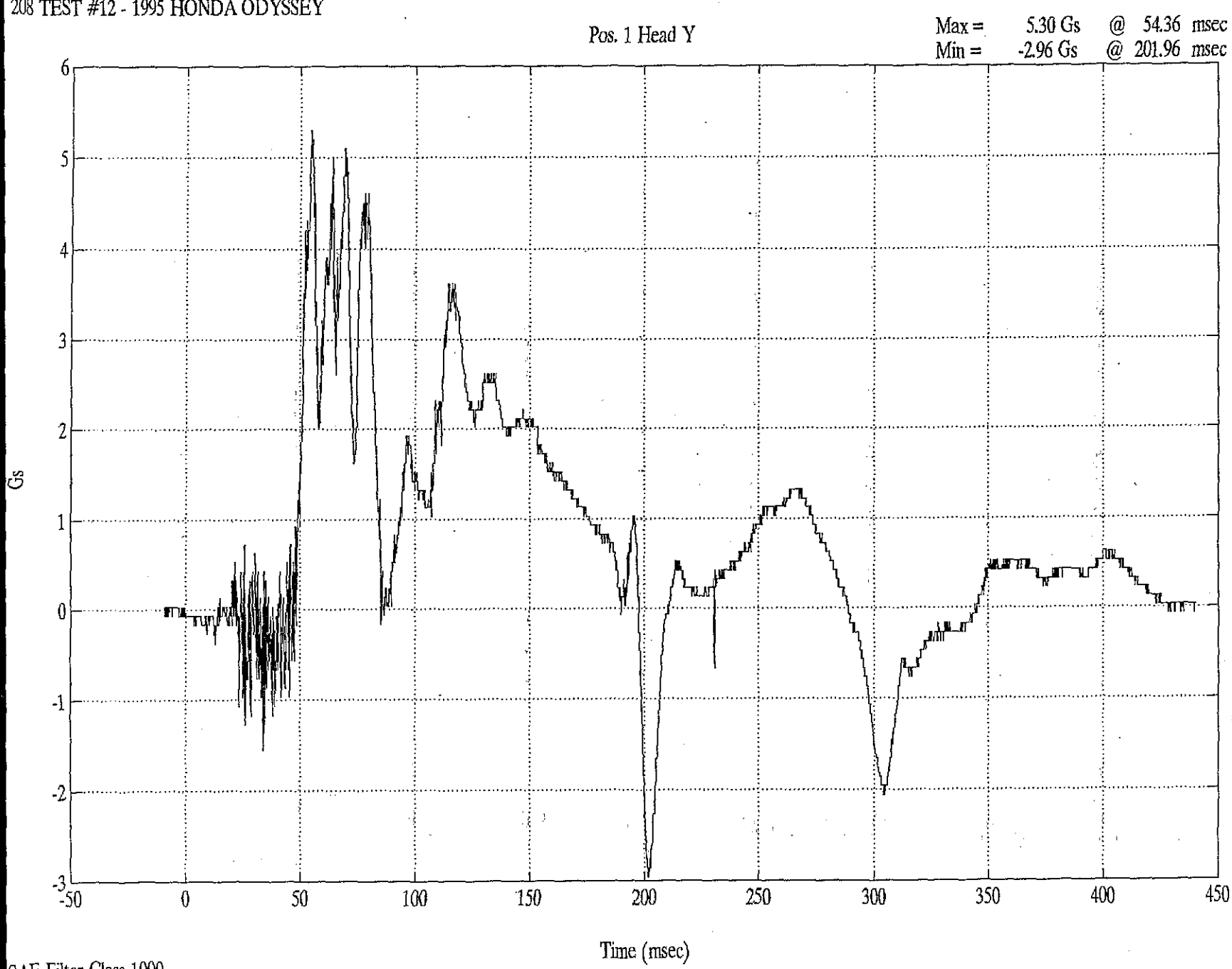
36 ms Fixed Duration HIC SUMMARY: Pos. 1 Head Resultant
hic: 158.56
t1 = 63.480 msec
t2 = 94.800 msec
Average G's Over Hic Duration = 30.32

CLIP SUMMARY: Pos. 1 Chest Resultant
Peak Resultant (3 ms CLIPPED DURATION) = 55.382 G's
Tstart = 76.0800 ms
Tend = 79.2000 ms
CSI = 372.274

36 ms Fixed Duration HIC SUMMARY: Pos. 2 Head Resultant
hic: 307.17
t1 = 115.920 msec
t2 = 125.280 msec
Average G's Over Hic Duration = 64.04

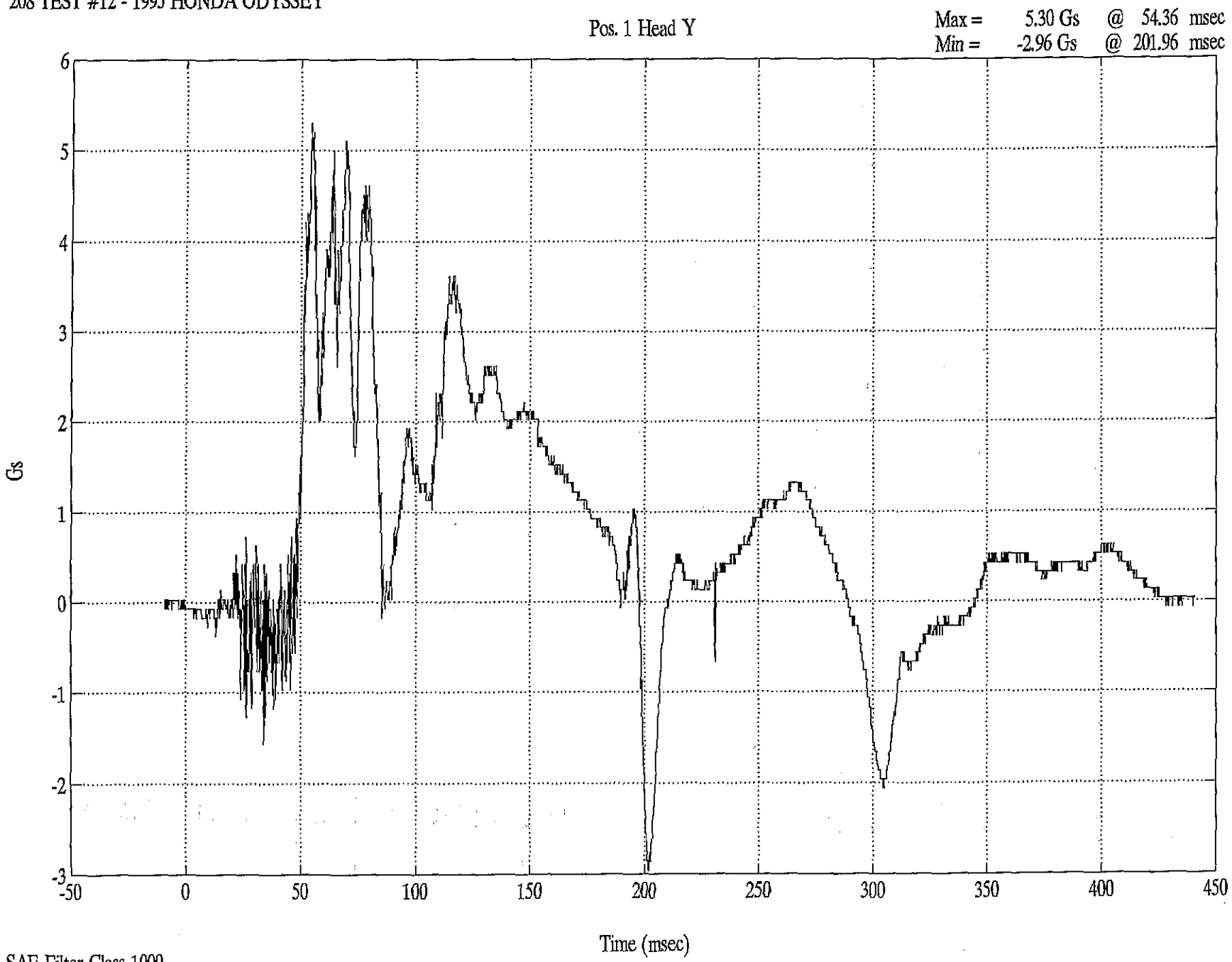
CLIP SUMMARY: Pos. 2 Chest Resultant
Peak Resultant (3 ms CLIPPED DURATION) = 43.087 G's
Tstart = 79.9200 ms
Tend = 83.0400 ms
CSI = 360.073

208 TEST #12 - 1995 HONDA ODYSSEY



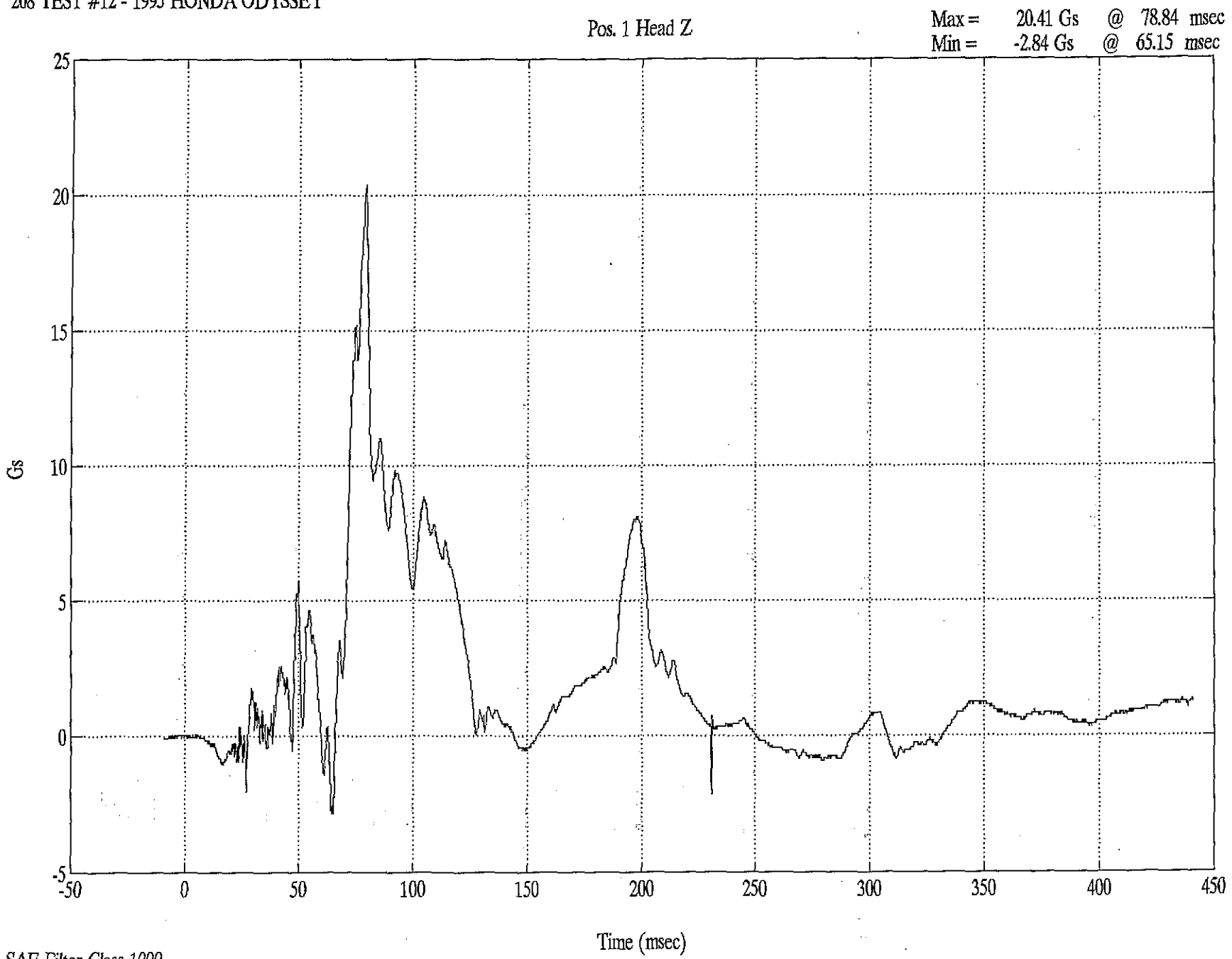
SAE Filter Class 1000

208 TEST #12 - 1995 HONDA ODYSSEY



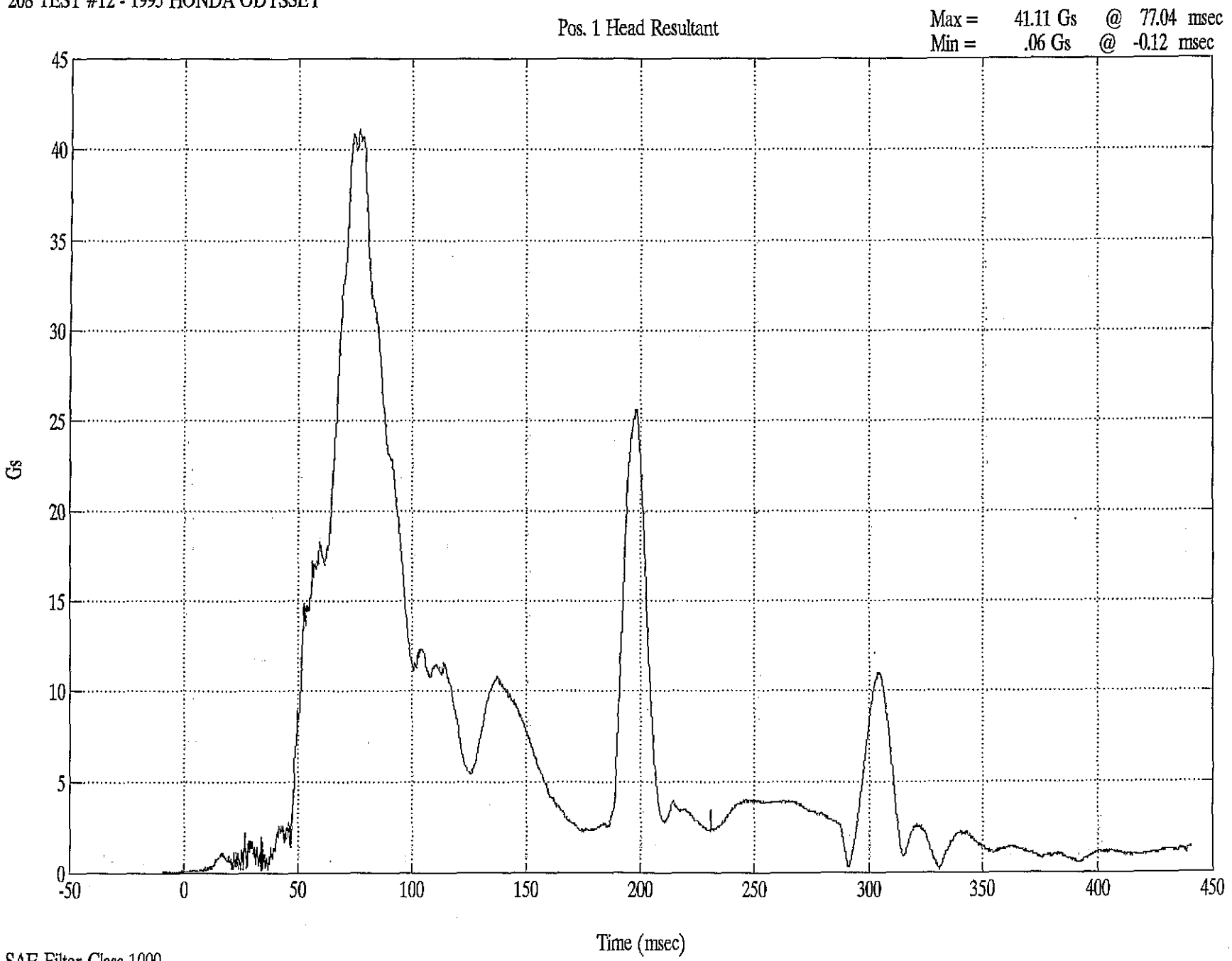
SAE Filter Class 1000

208 TEST #12 - 1995 HONDA ODYSSEY



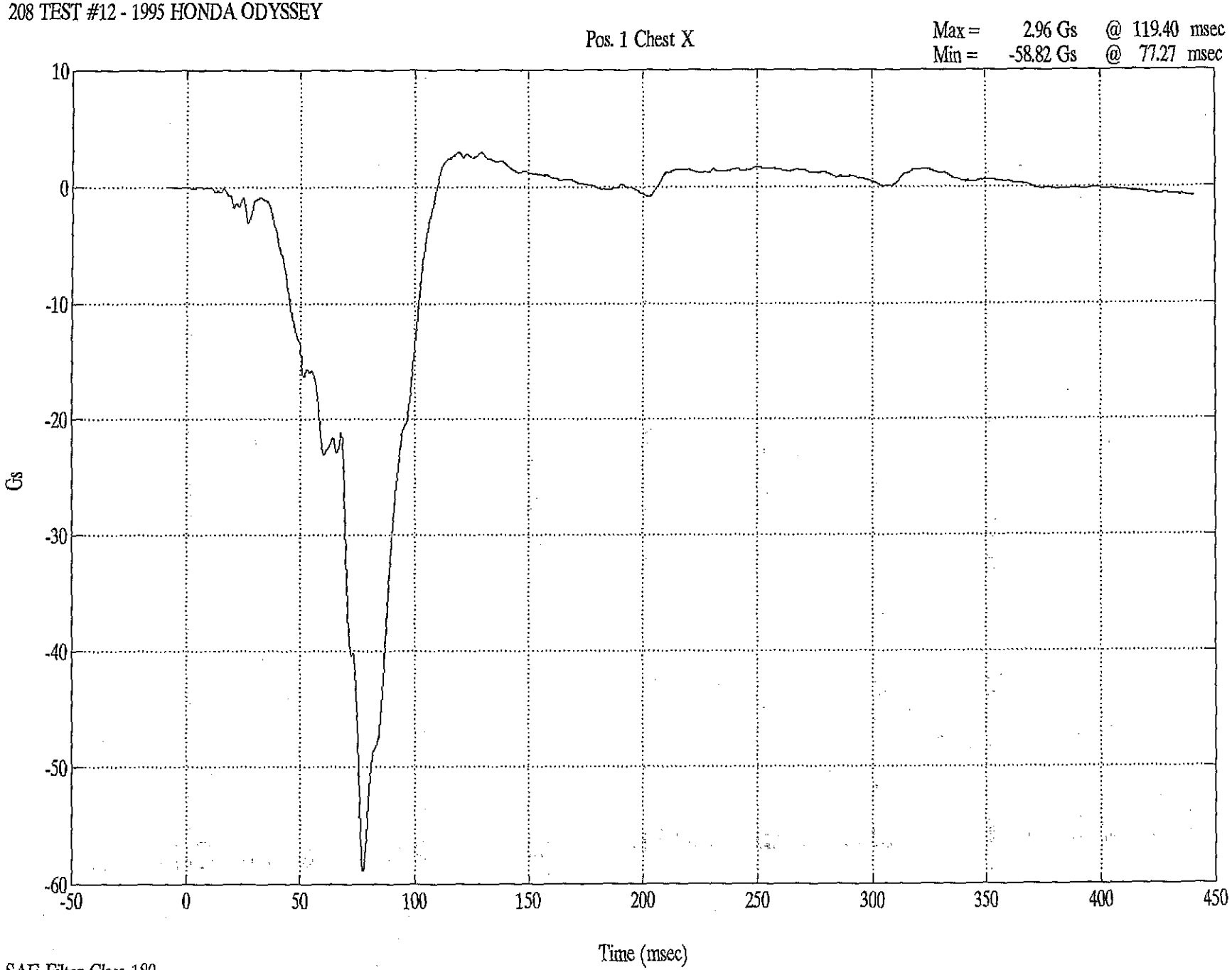
SAE Filter Class 1000

208 TEST #12 - 1995 HONDA ODYSSEY



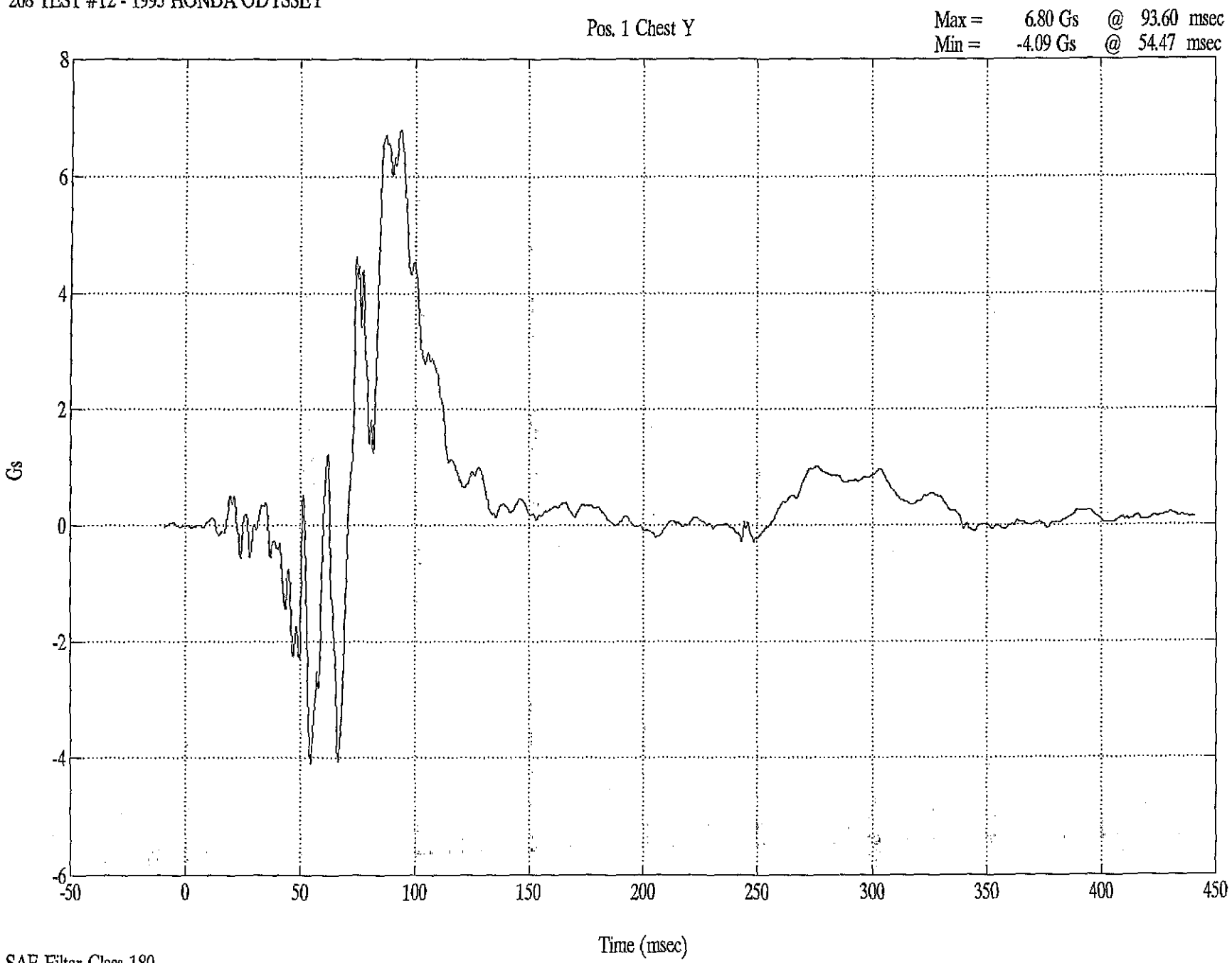
SAE Filter Class 1000

208 TEST #12 - 1995 HONDA ODYSSEY



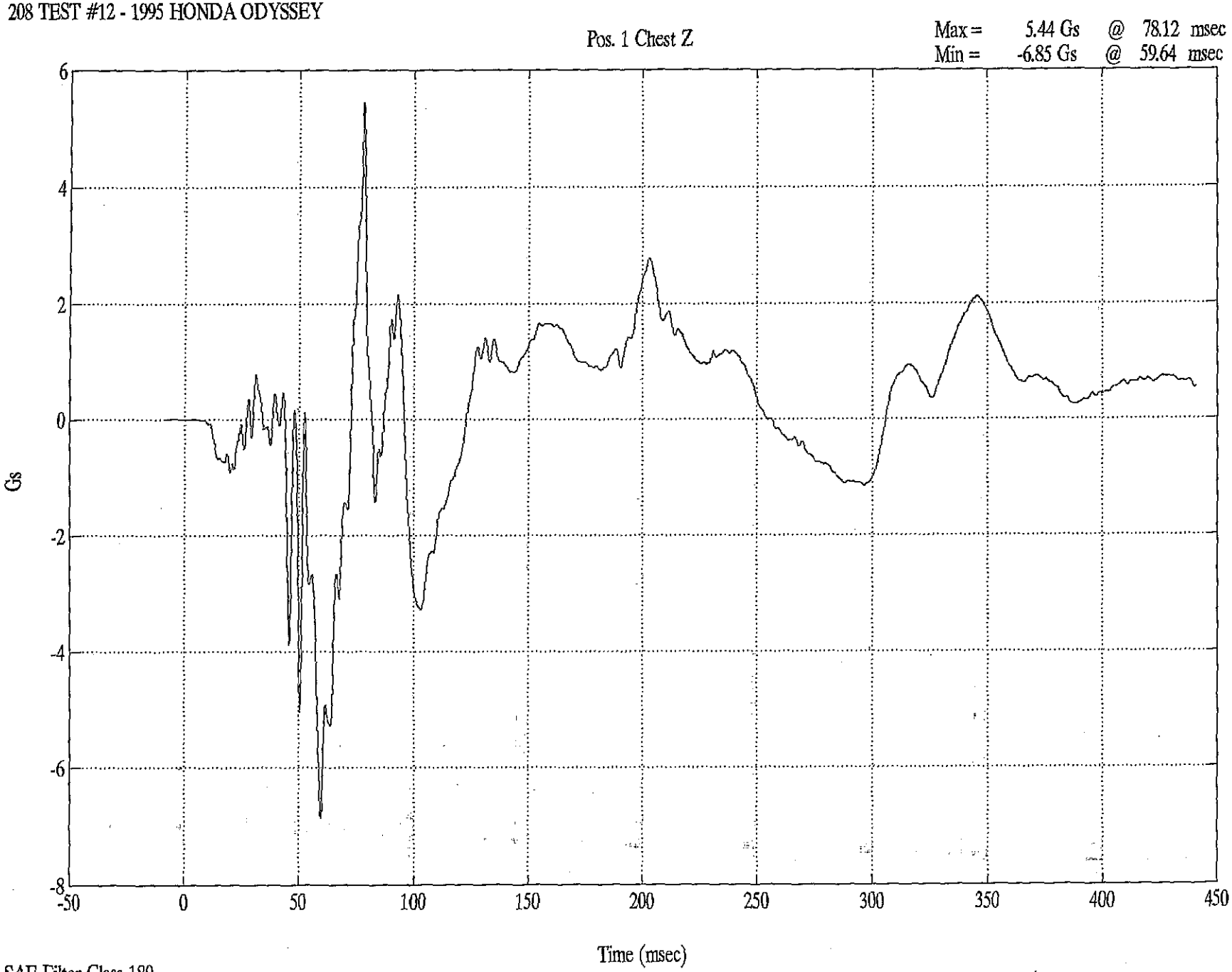
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



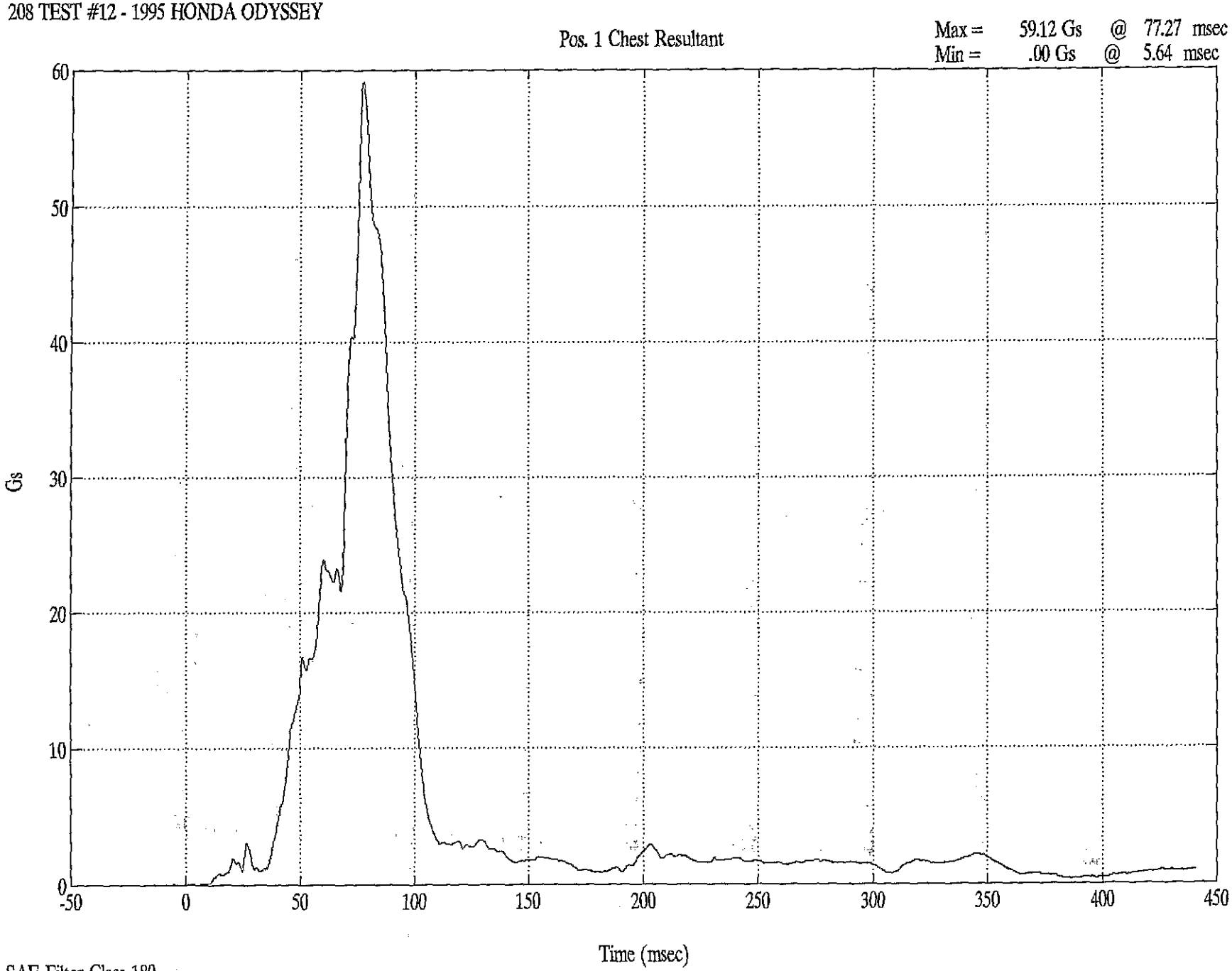
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



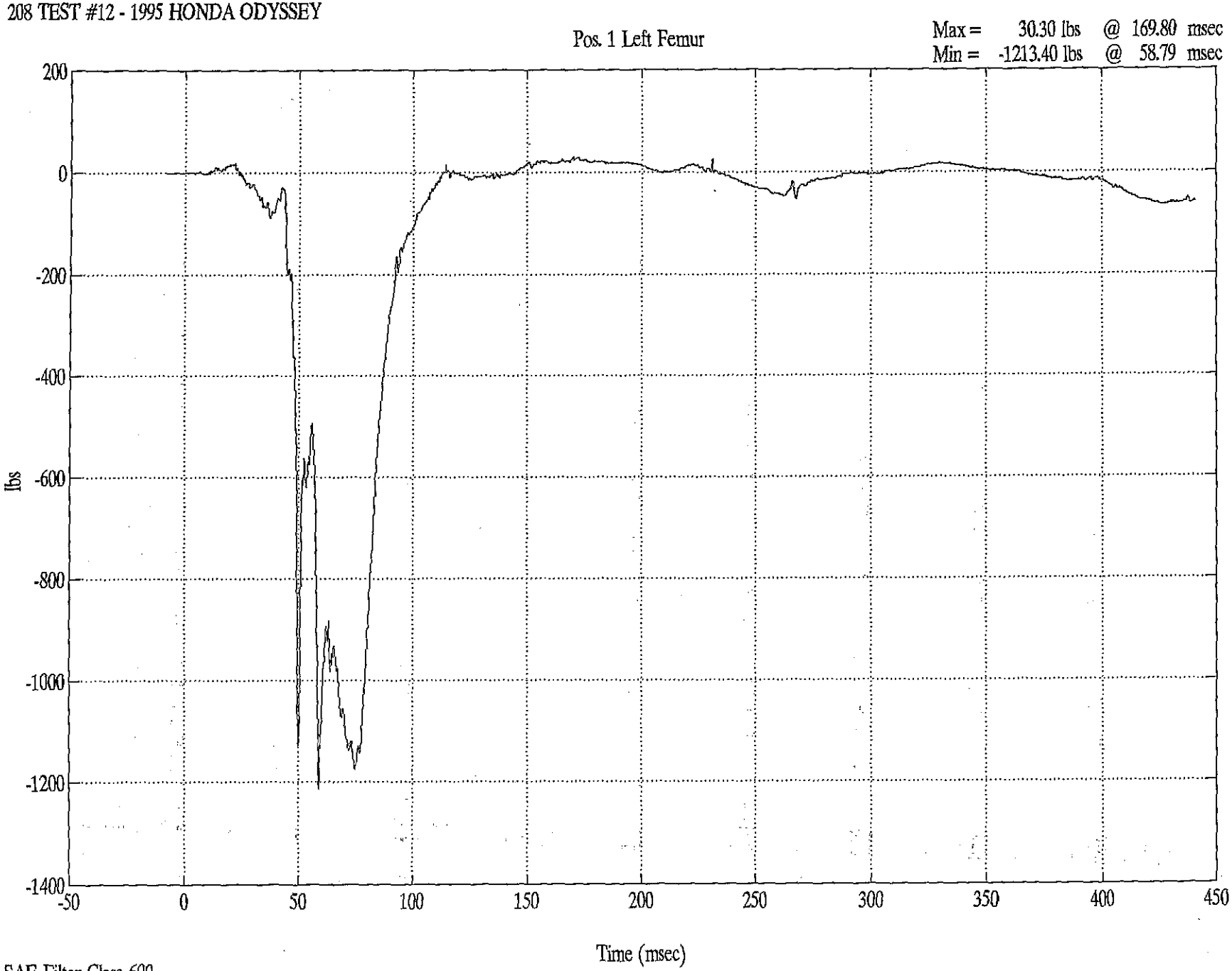
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



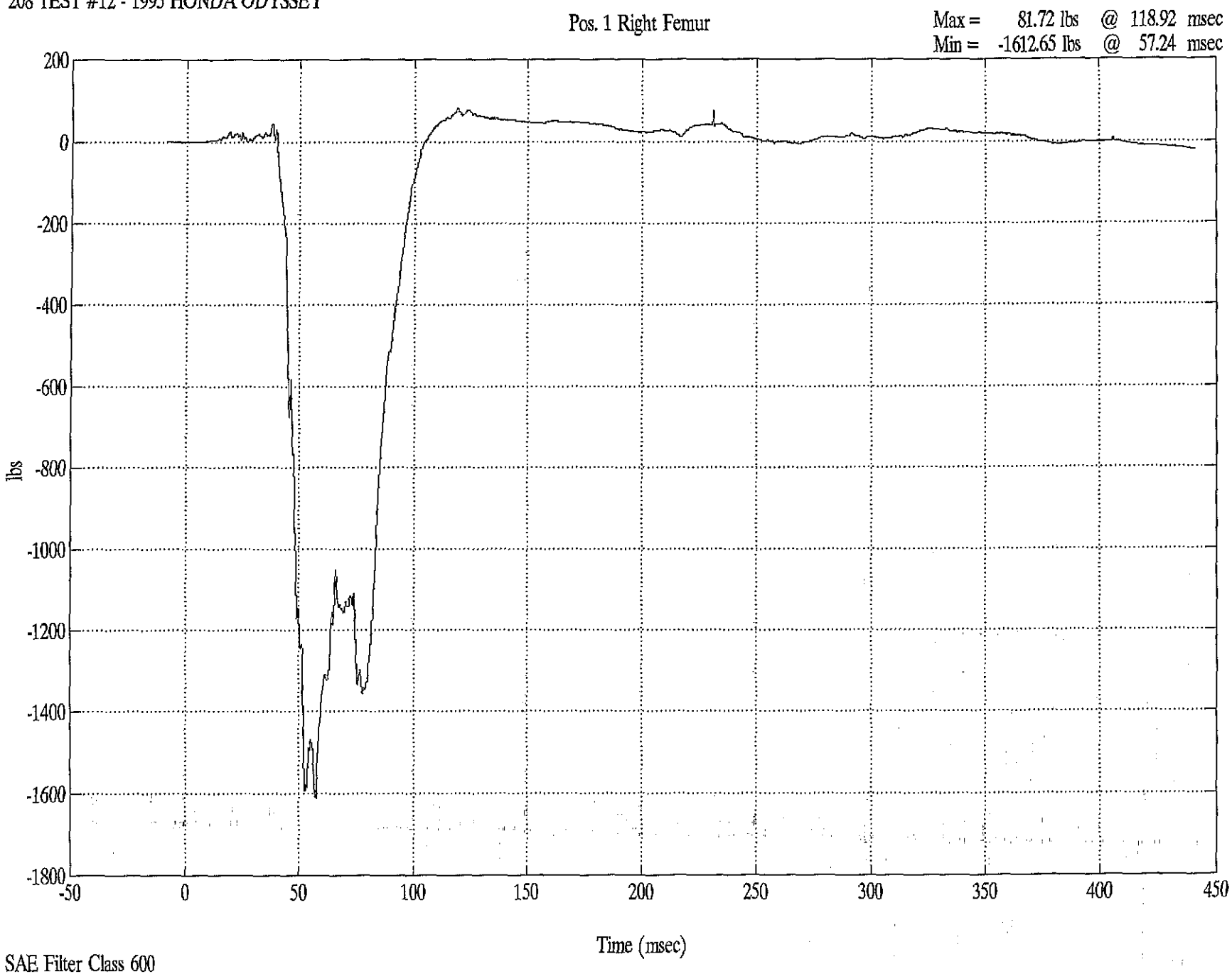
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



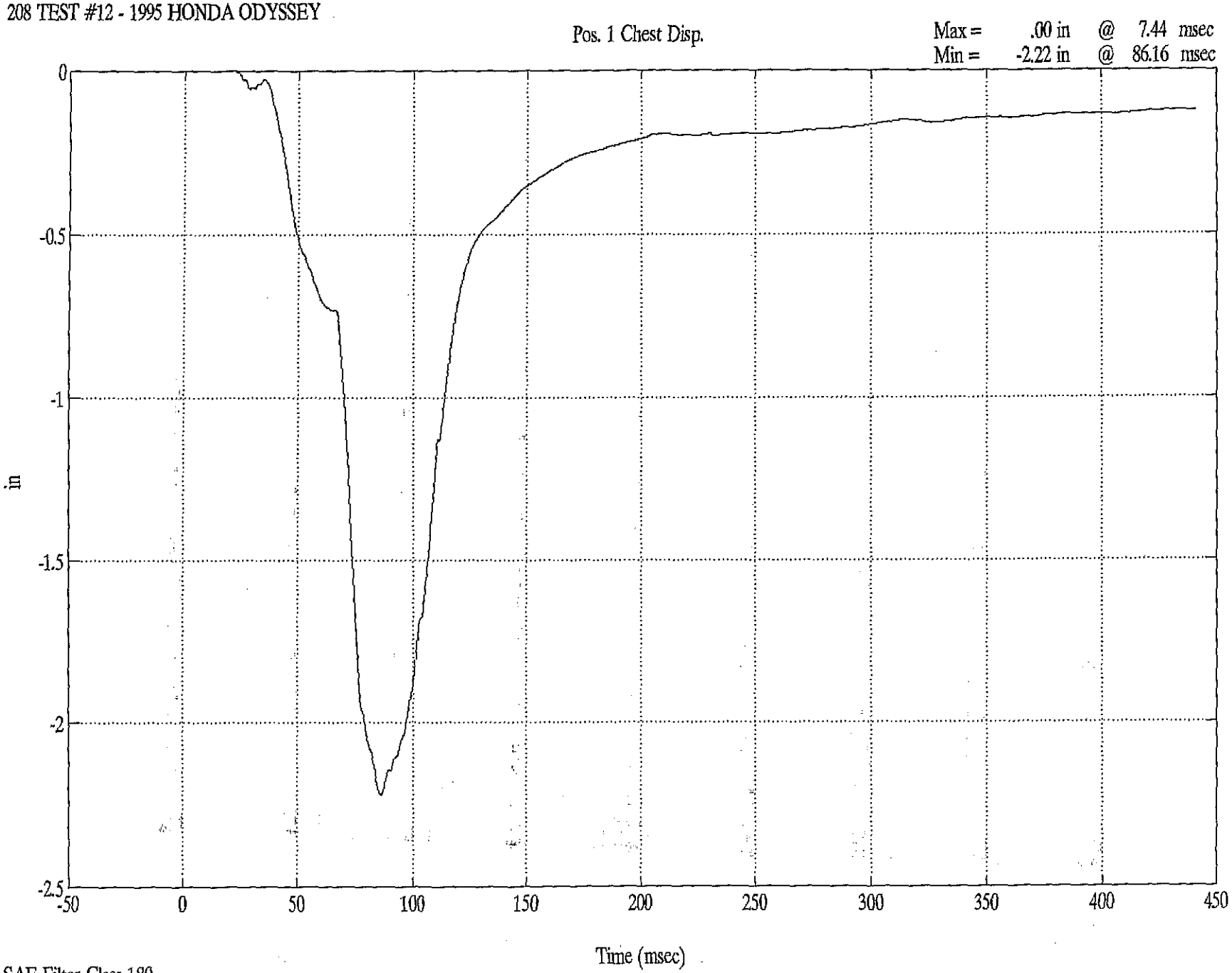
SAE Filter Class 600

208 TEST #12 - 1995 HONDA ODYSSEY



SAE Filter Class 600

208 TEST #12 - 1995 HONDA ODYSSEY

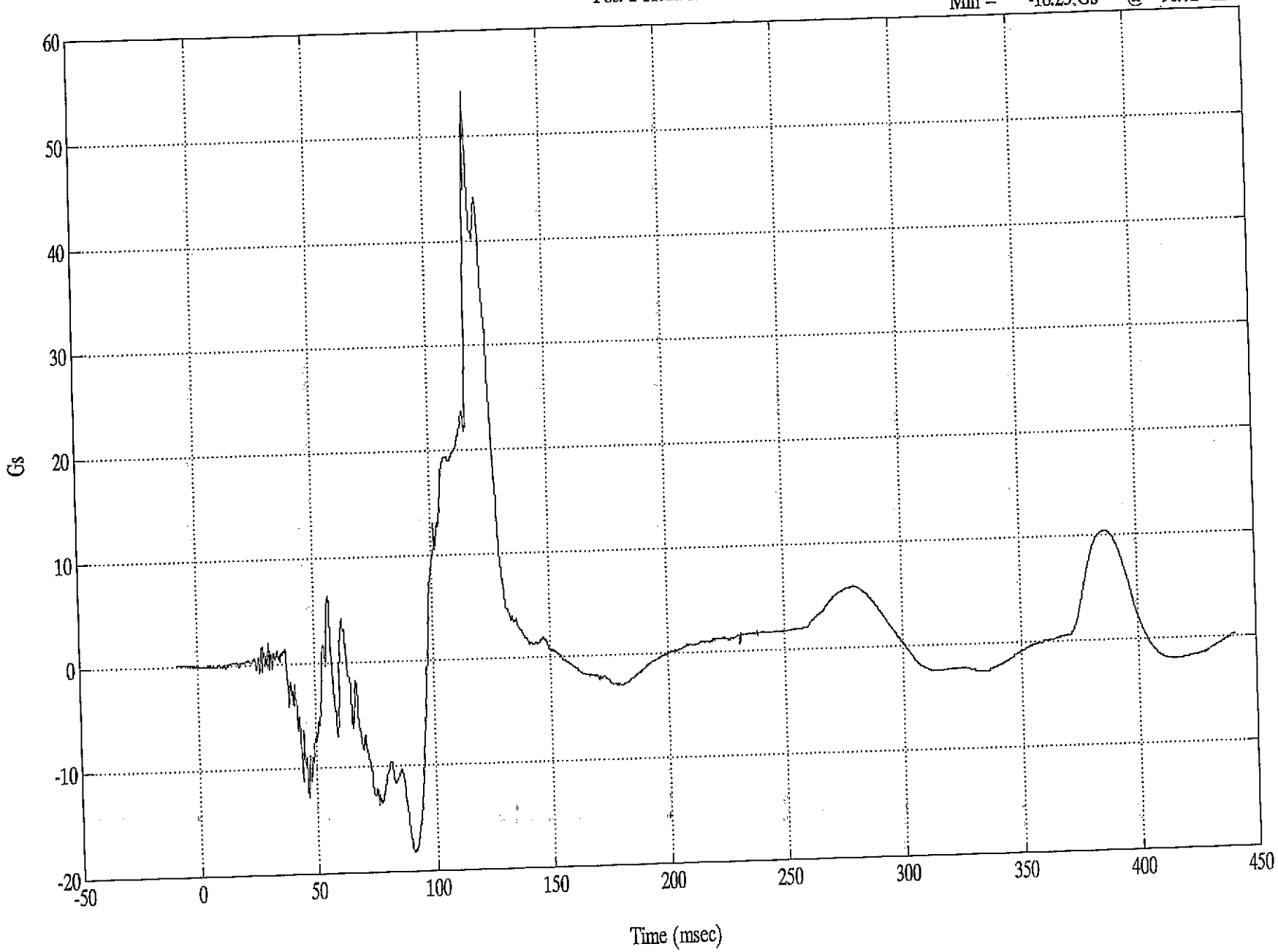


SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY

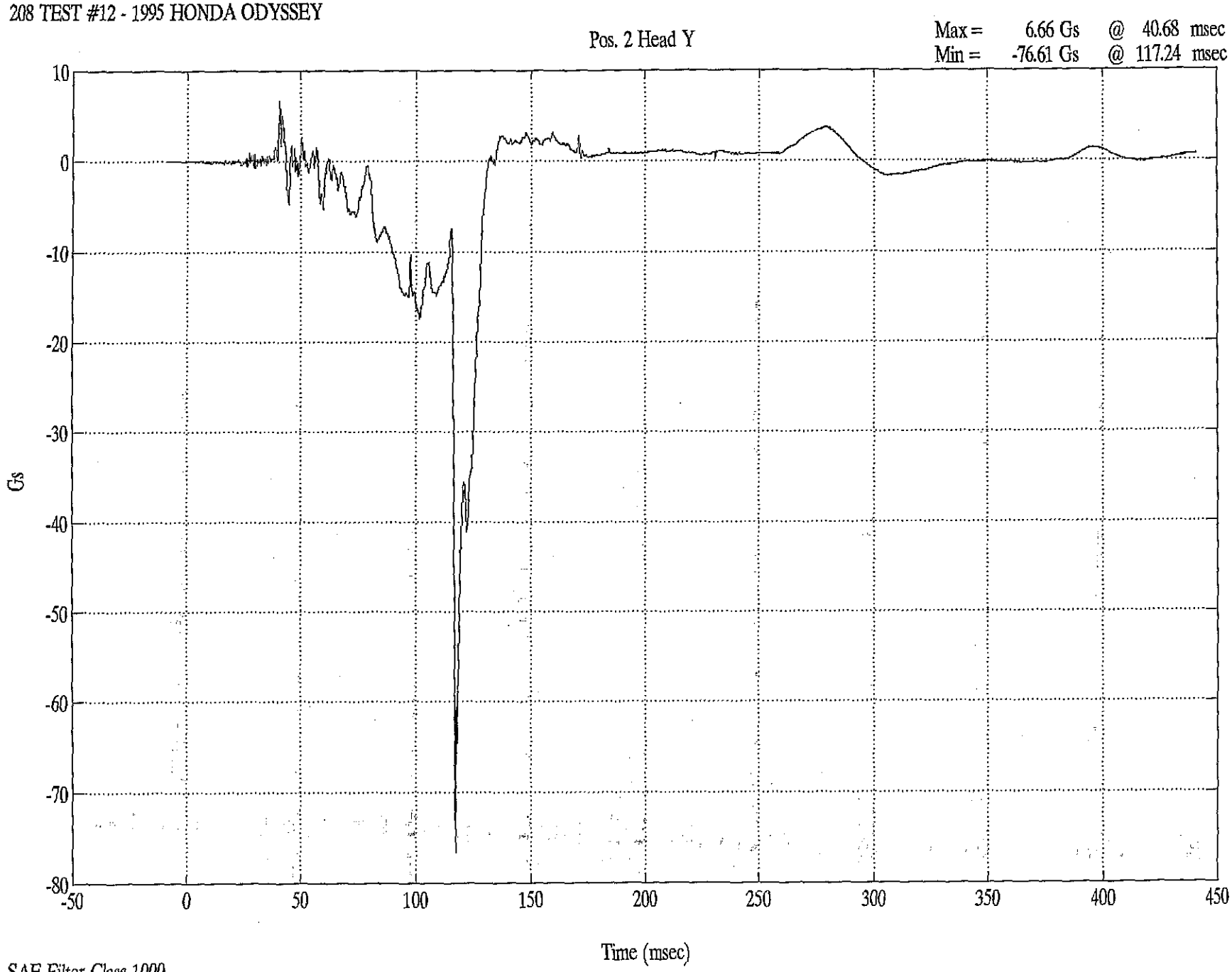
Pos. 2 Head X

Max = 54.18 Gs @ 117.59 msec
Min = -18.23 Gs @ 90.72 msec



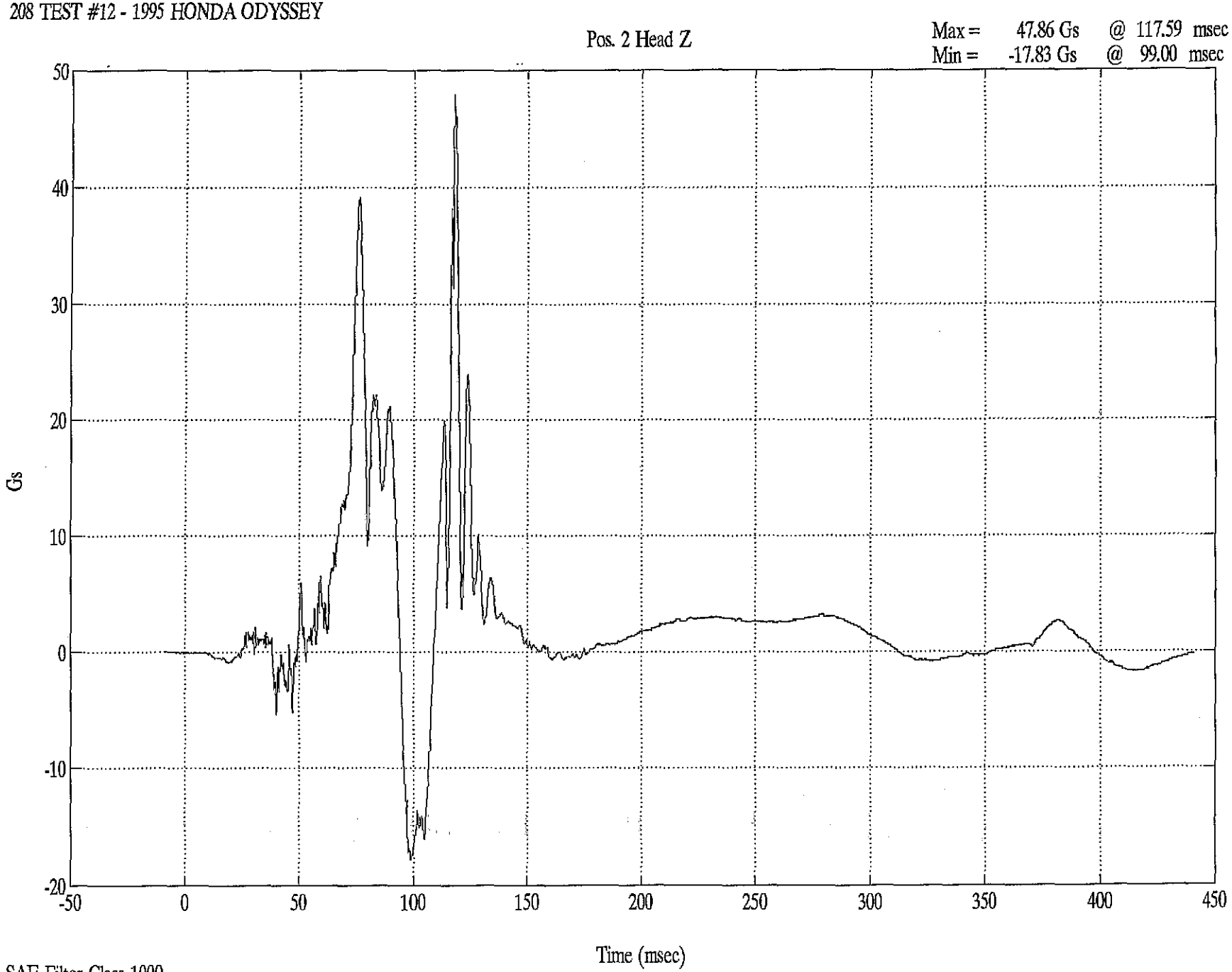
SAE Filter Class 1000

208 TEST #12 - 1995 HONDA ODYSSEY



SAE Filter Class 1000

208 TEST #12 - 1995 HONDA ODYSSEY

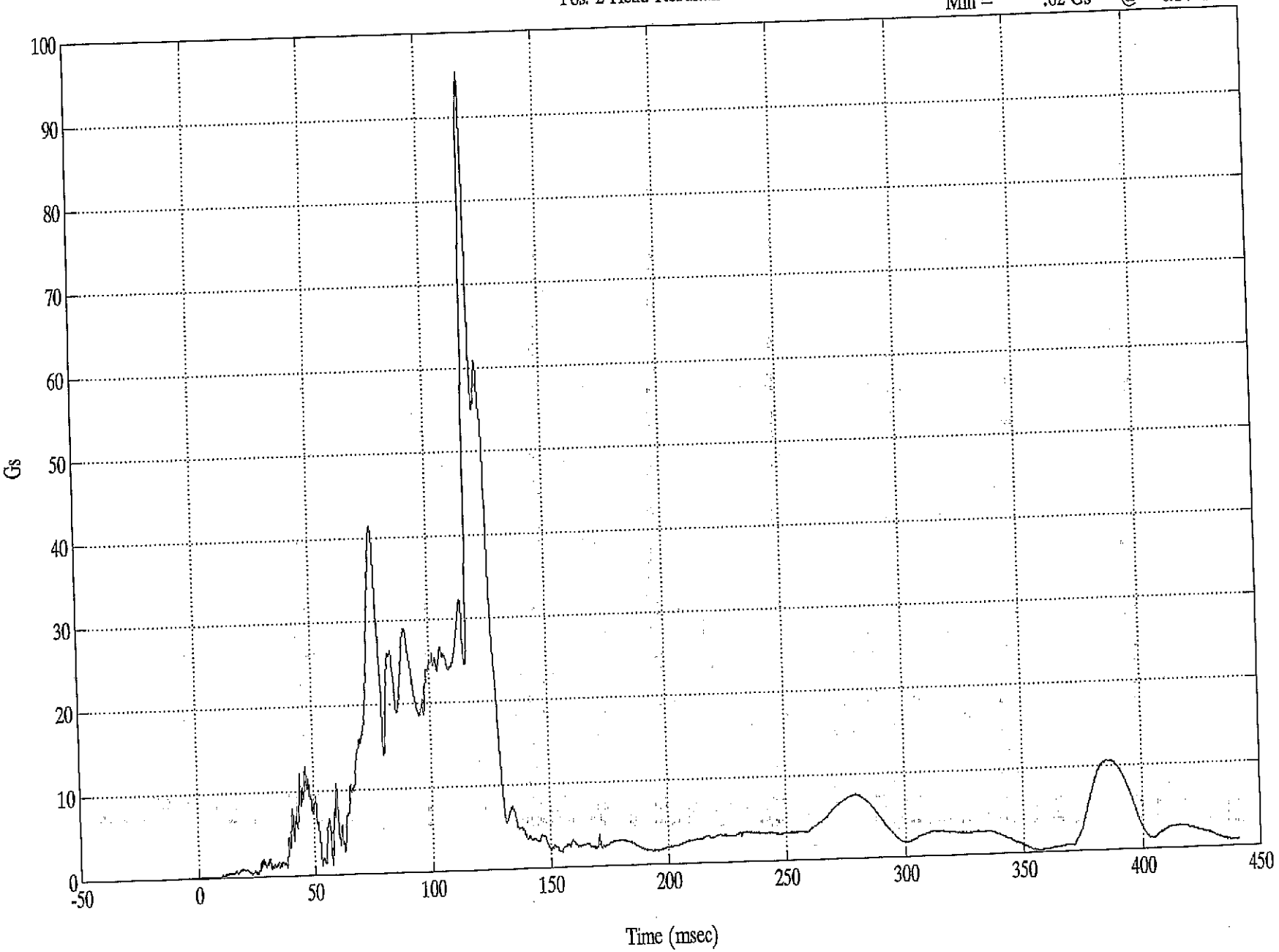


SAE Filter Class 1000

208 TEST #12 - 1995 HONDA ODYSSEY

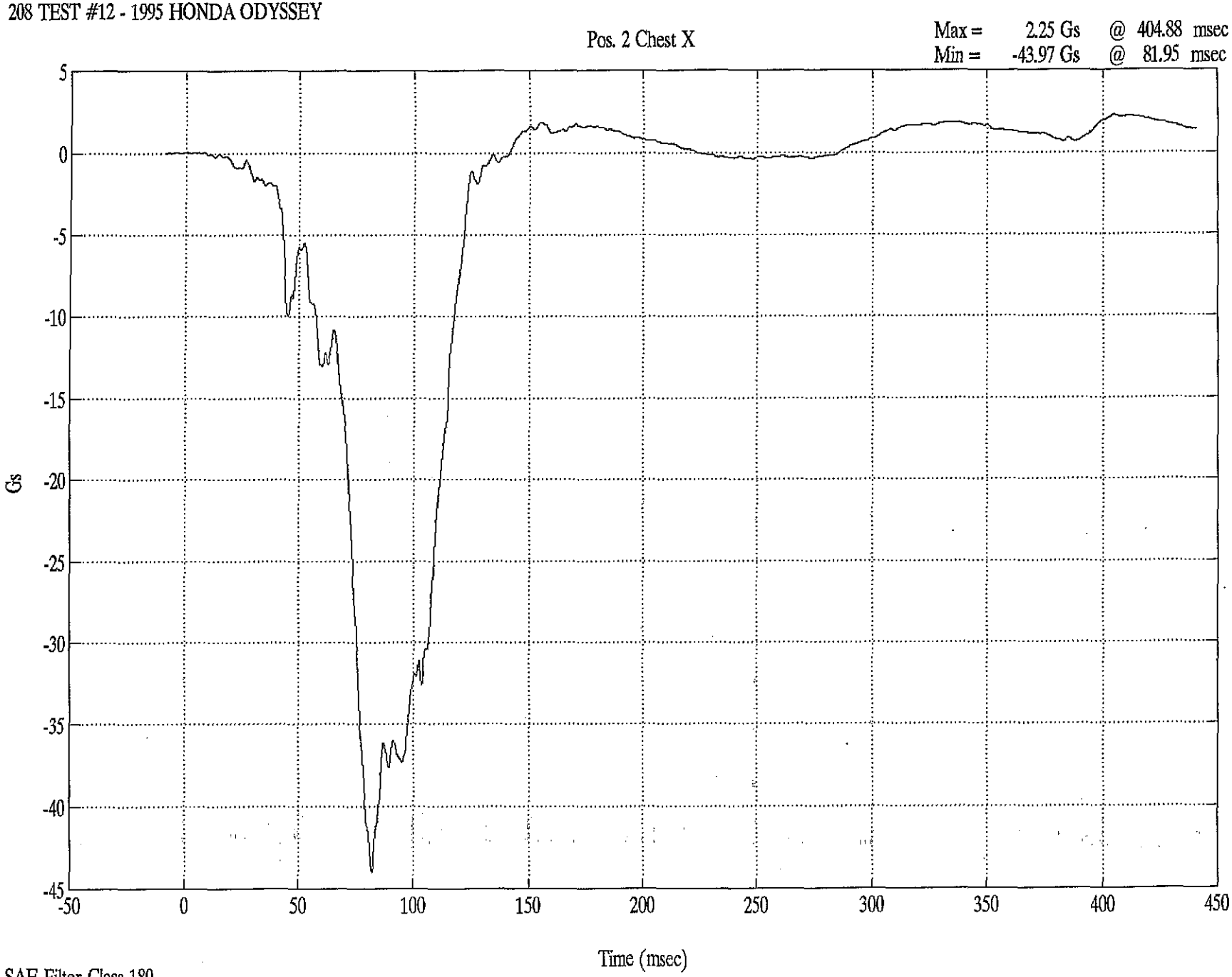
Pos. 2 Head Resultant

Max = 95.26 Gs @ 117.96 msec
Min = .02 Gs @ 6.84 msec



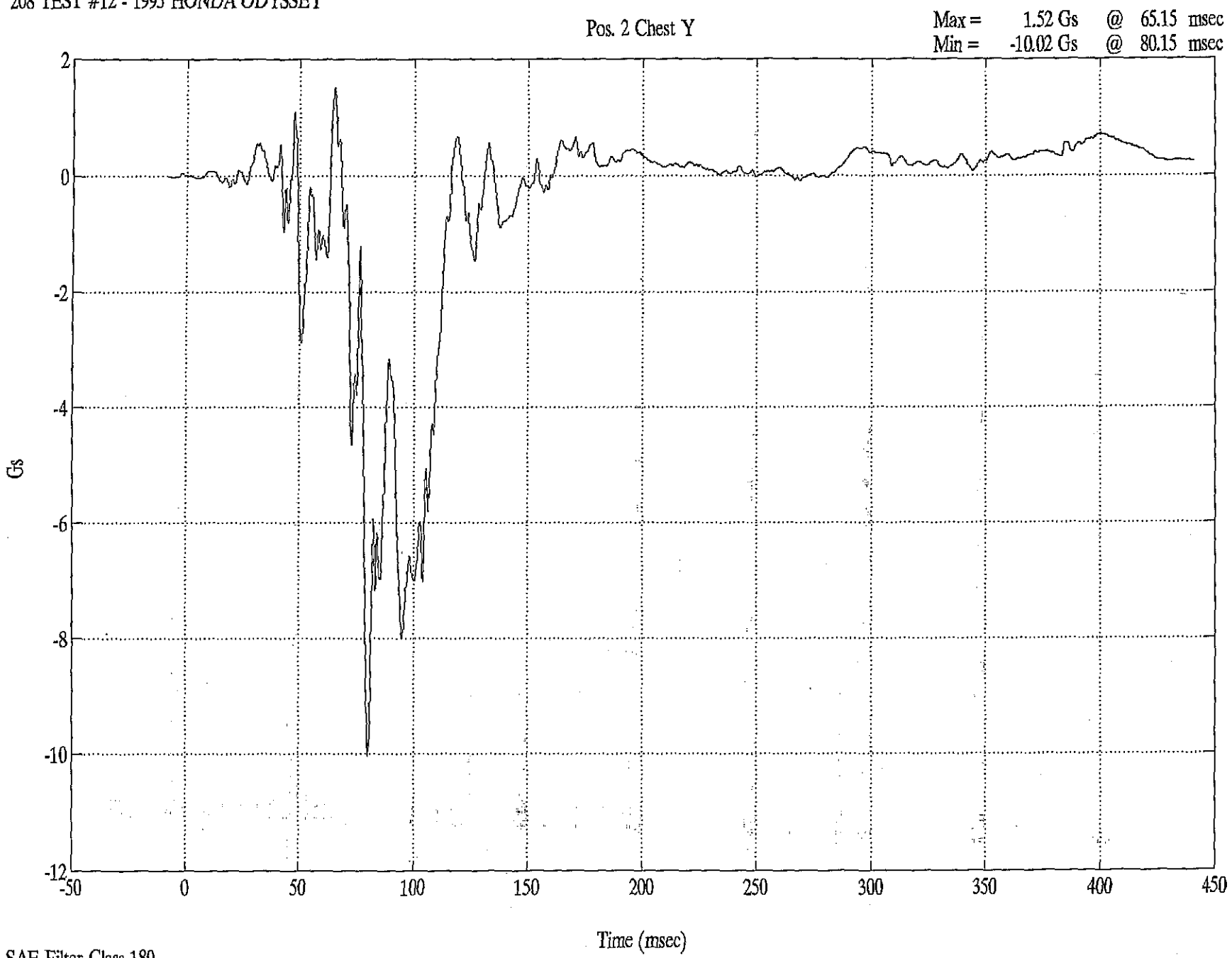
SAE Filter Class 1000

208 TEST #12 - 1995 HONDA ODYSSEY



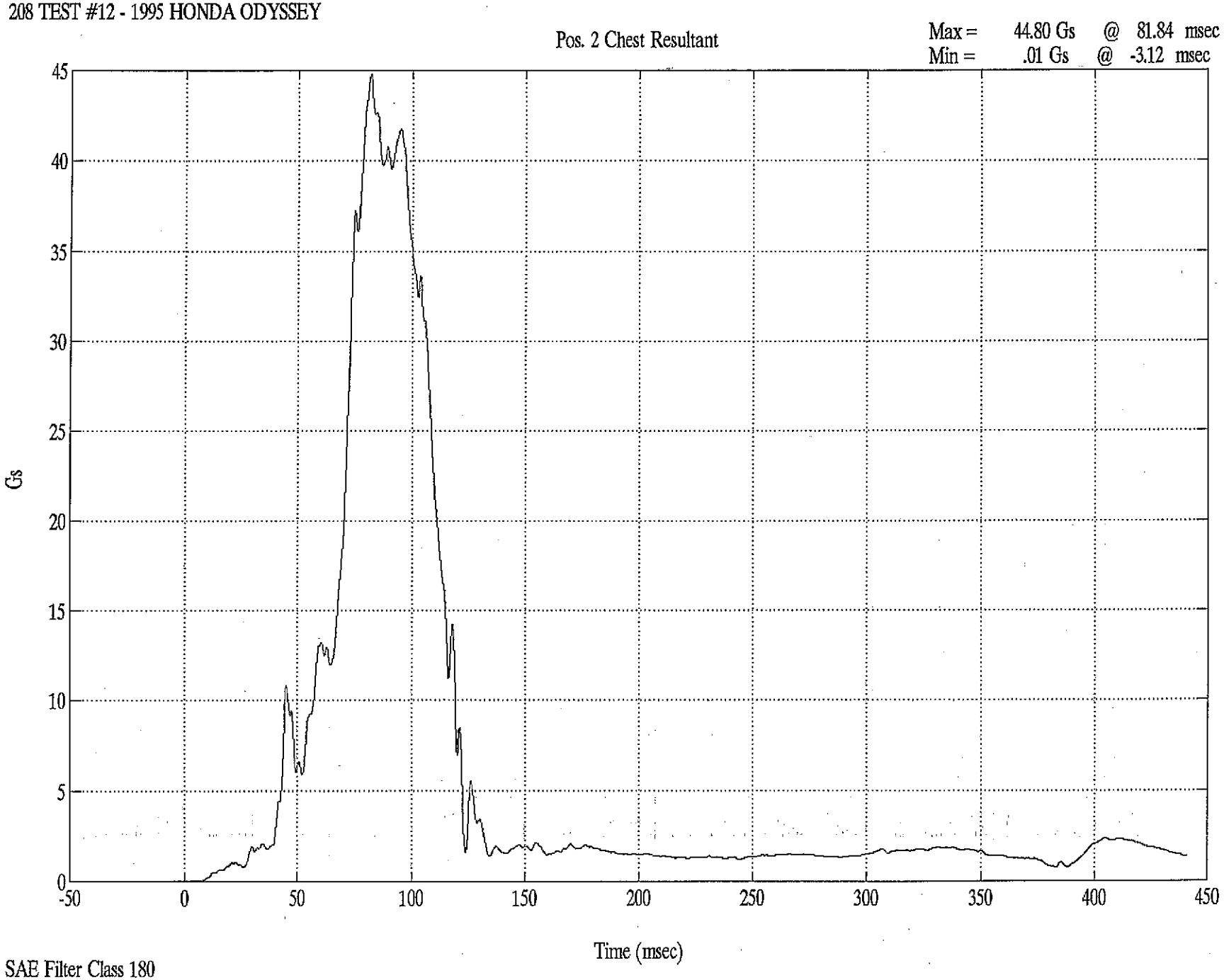
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



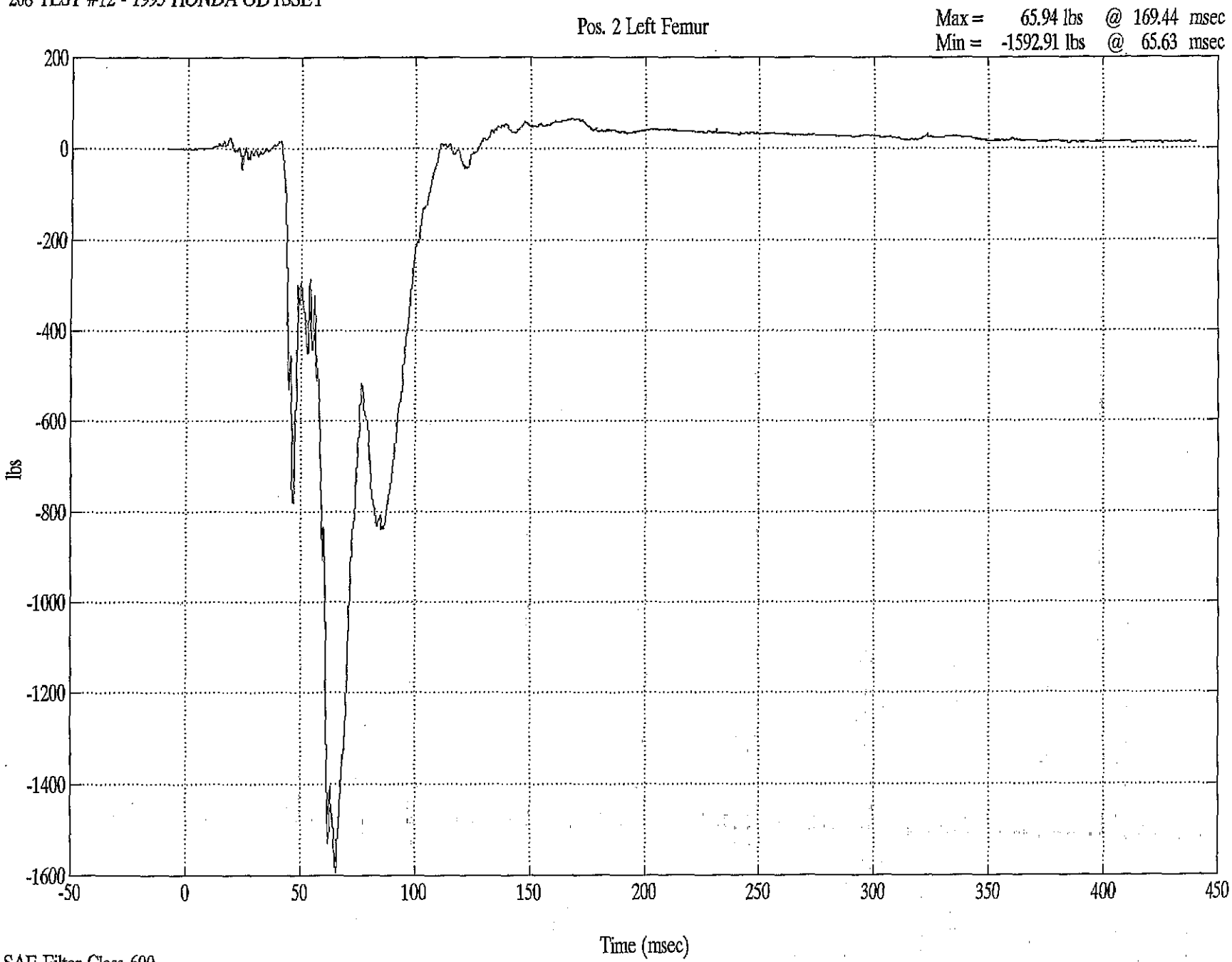
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



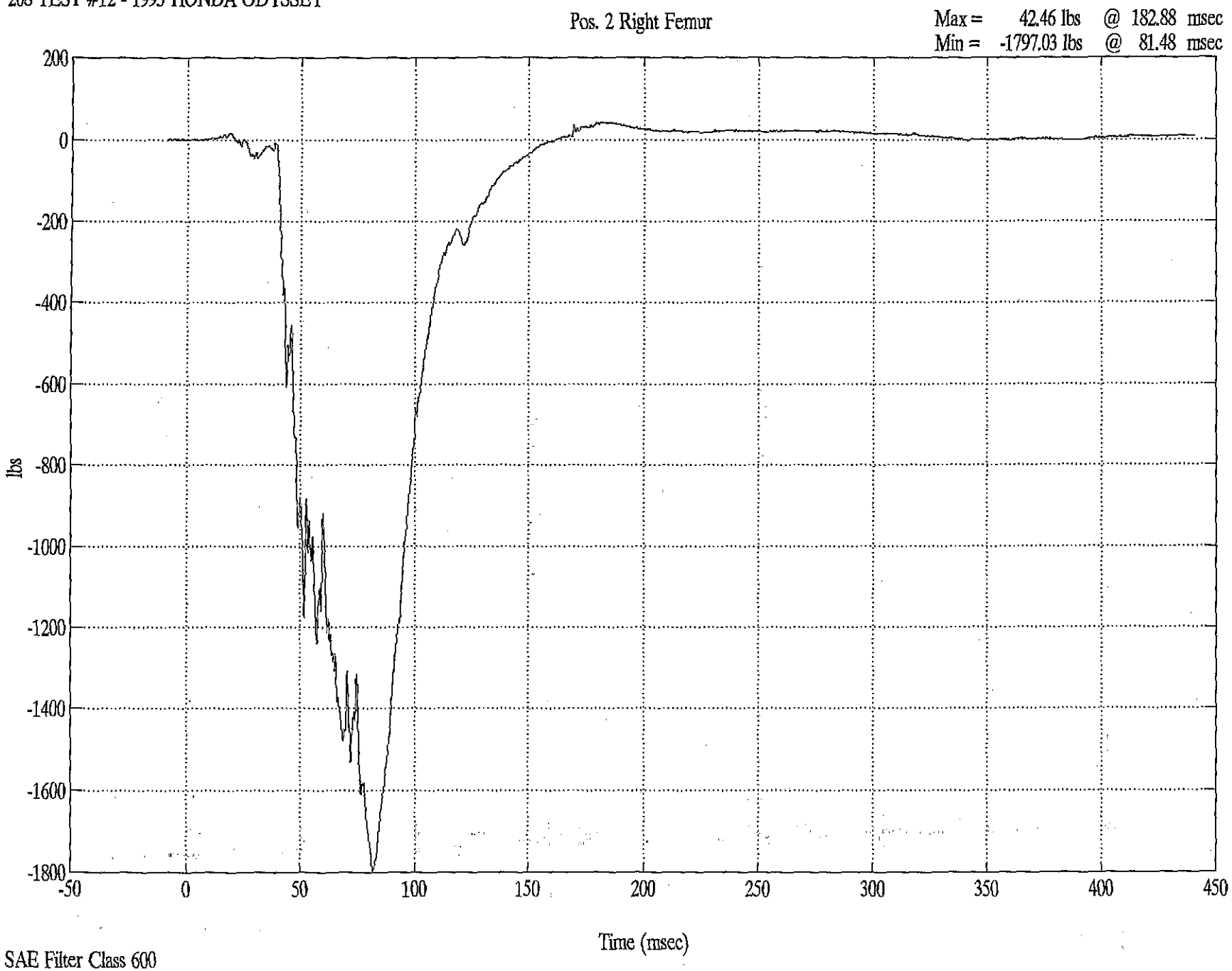
SAE Filter Class 180

208 TEST #12 - 1995 HONDA ODYSSEY



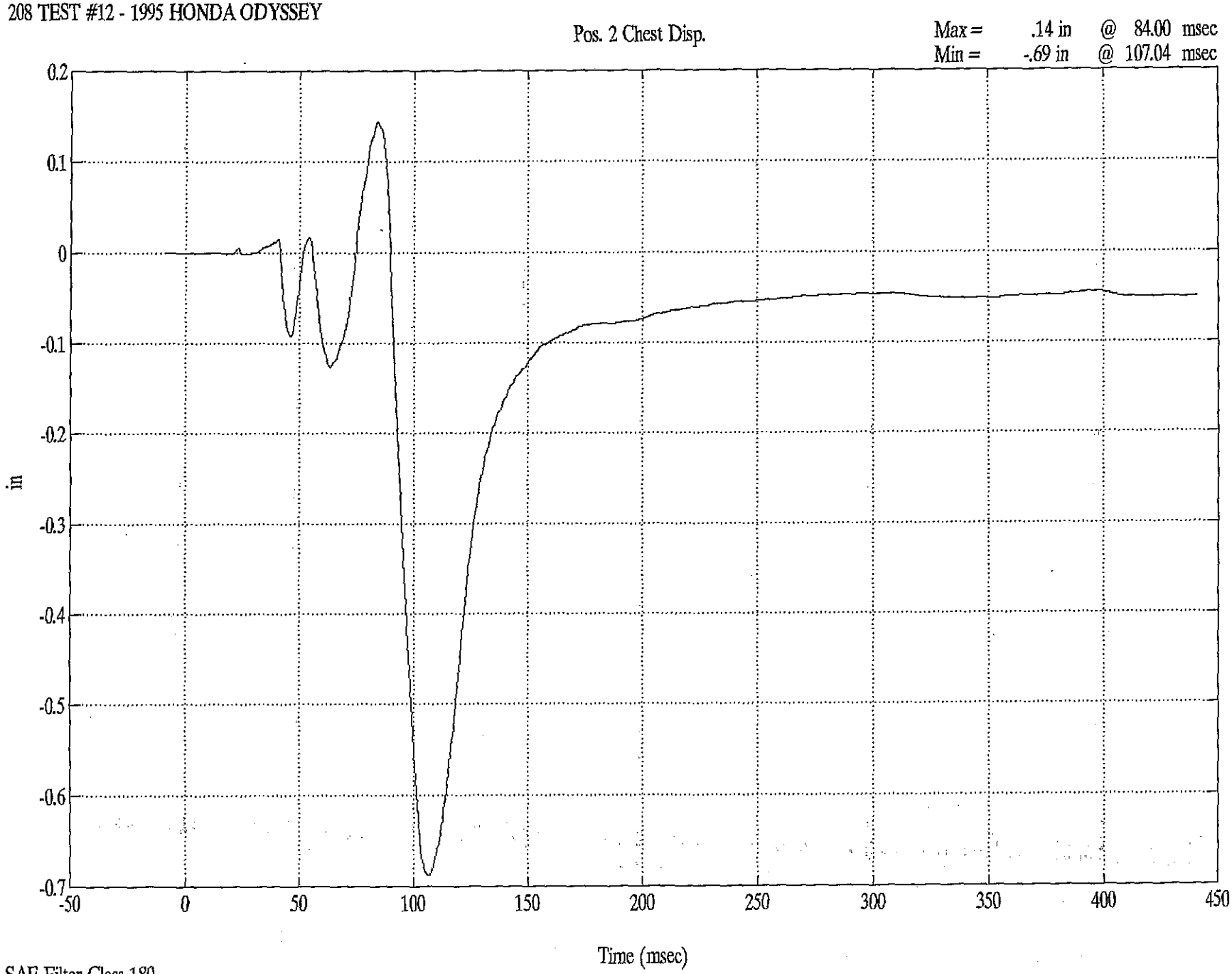
SAE Filter Class 600

208 TEST #12 - 1995 HONDA ODYSSEY



SAE Filter Class 600

208 TEST #12 - 1995 HONDA ODYSSEY



SAE Filter Class 180